Guidelines

GUIDELINES FOR TRAFFIC SIGNAL CONTROLLERS AND INSPECTION

Privately funded projects without a Cooperative Agreement - Project proponent pays costs for Department furnished controller assembly.

The following are examples of the equipment costs associated with Model 170 Traffic control equipment on State Highways. These costs are updated annually, if necessary, after determining the average actual cost for the State to acquire, test, stock and ship the equipment to the local District. For additional equipment and their associated costs, please see the attached price list on pages 3 to 7.

These costs should be included in the deposit prior to the issuance of the contractor's encroachment permit. In cases where there is a long lead-time before starting work, these costs may be submitted immediately prior to performing work on a signal system.

Districts should determine and charge additional fees covering the actual cost to deliver, install, inspect, and turn on traffic signal controllers.

**Model 170E Controller Assembly WITH Battery Back Up System $6,800.00*

- 1 - Model 170E Controller
- 1 - Model 332A Cabinet
- 12 - Model 222 Two Channel Detectors
- 3 - Model 242 Dual Isolation Module
- 12 - Model 200 Switch Packs
- 1 - Battery Back Up System (BBS) (External Batteries)
- 1 - BBS Cabinet External Batteries

**Model 170E Controller Assembly WITHOUT Battery Back Up System $4,800.00*

- 1 - Model 170E Controller
- 1 - Model 332A Cabinet
- 12 - Model 222 Two Channel Detectors
- 3 - Model 242 Dual Isolation Module
- 12 - Model 200 Switch Packs

Projects involving Cooperative Agreements - Project proponent pays costs for Department furnished controller assembly

The traffic signal controllers, and all other actual costs incurred by Caltrans, are charged against the appropriate Cooperative Agreement Expenditure Authorization. When there is State participation in the project, the State's share of the actual costs of the project will be reduced by the actual cost of the controllers, which include controller fee, testing costs and any other mandatory charges.

Procedures to order controller assemblies from the State warehouse

To allow time for delivery to the District, controller assemblies shall be ordered from the Sacramento warehouse a minimum of 10 working days before a permittee plans to pick up an assembly in the district (controller not included). Caltrans Maintenance or Traffic staff will deliver actual controllers and auxiliary equipment to job sites at the time of a scheduled signal turn on.

Charges for Encroachment Permit projects

As each controller assembly is ordered, the districts shall instruct the Caltrans warehouse in Sacramento to charge the equipment to the Encroachment Permit Expenditure Authorization (EA) 937700, using Subjob 3EPIC and Object Code 118. A Special Designation (SD) of 7CONTROL must also be used if the permittee has paid a fee for the equipment.

Charges for Cooperative Agreement projects

For Cooperative Agreement projects, the district should instruct the warehouse to charge the equipment to the appropriate Cooperative Agreement EA, with any applicable SD identified for the project (do not use an Encroachment Permit EA or SD on these Cooperative Agreement Project

FEES FOR TRAFFIC SIGNAL CONTROLLERS AND INSPECTION

TYPE OF PROJECT	PROJECT FEE PAYMENTS		
	CONTROLLER	INSPECTION	DELIVERY AND INSTALLATION
PRIVATELY FUNDED	YES	YES	YES
LOCALLY FUNDED W/O AGREEMENT	YES (Paid by Contractor)	YES (Paid by Contractor)	YES (Paid by Contractor)
JOINT FUNDED PROJECTS WITH COOPERATIVE AGREEMENTS	YES (As part of State Contribution and Charged to Coop EA)	YES (As part of State Contribution and Charged to Coop EA)	YES (As part of State Contribution and Charged to Coop EA)
100% SPECIAL FUNDED PROJECTS WITH AGREEMENTS	YES (Charged to Coop EA)	YES (Charged to Coop EA)	YES (Charged to Coop EA)

May 2004

MODEL 170/2070 TRAFFIC CONTROL EQUIPMENT

ITEM NUMBER NAME	DESCRIPTION	UNIT PRICE* (Approximate)
7440 0100 1 Cabinet	Model 334C Cabinet for Type 170 Controller	$2,422.00
7440 0102 5 PDA 2	Power Distribution Assembly 2	$559.00
7440 0103 7 PDA 3	Power Distribution Assembly 3	$497.00
7440 0130 4 Modem	Model 400 Modem	$85.00
7440 0131 6 Harness	C2P Modem Interconnect Harness	$25.00
7440 0134 2 Comm Card	Model 7A Communication Card	$
7440 0136 7 Modem	Model 6A Modem (Model 2070)	$
7440 0137 9 Modem	Model 6B Modem (Model 2070)	$
7440 0173 4 Controller	Type 170E Controller Quad ACIA	$827.00
7440 0175 9 CMS	Changeable Message Sign (CMS) Model 500 System	$38,549.00
7440 0177 3 CMS Cabinet	Model 500 CMS Cabinet	$4,620.00
7440 0179 7 Cabinet	Model 332A Cabinet for Type 170 Controller Unit	$3,032.00
7440 0181 1 CMS	Changeable Message Sign Model 510 System	$38,700.00

NOTE: All items are expressed in unit or each. *Mark up has been applied.
0 % (SVS 218 - 12/04/03

MODEL 170/2070 TRAFFIC CONTROL EQUIPMENT

7440 0188 6 CMS	Model 520 CMS System	$46,701.00
7440 0189 8 Controller	Model 2070L Controller	$
7440 0196 3 Isolator	Model 252 RR Isolator 2 Channel AC (includes harness)	$45.00
7440 0290 2 Switch Pack	Model 200 Switch Pack	$16.00
7440 0330 8 Monitor	Model 210 Monitor	$193.00
7440 0332 2 Monitor	Model 208 Monitor Unit	$92.00
7440 0350 0 Detec-2	Model 222 Dual Loop Vehicle Detector	$43.00
7440 0400 7 Probe	Model 231 Magnetic Detector Probe	$81.00
7440 0430 0 Det.-Amp	Model 232 (E) Dual Magnetic Detector Amplifier Module	$436.00
7440 0475 5 Isolator 2	Model 242 Dual Isolation Module D.C.	$23.00
7440 0550 5 Auxifile	Output File #2 (Model 420)	$278.00
7440 0560 6 Flasher	Model 204 Flasher Unit	$17.00
7440 0575 8 PWR Supply	Model 206 Power Supply Module	$189.00
7440 0576 0 Module	System Module Model 412/C	$105.00
7440 0580 8 PROM	Ultra Violet Erasable Programmable - Read Only Memory UVE 27-128	$3.16

NOTE: All items are expressed in unit or each. *Mark up has been applied.
0 % (SVS 218 - 12/04/03

MODEL 170/2070 TRAFFIC CONTROL EQUIPMENT

7440 0581 0 PROM	UVE PROM 27256	$2.24
7440 0611 5 DDA-4	Power Distribution Assembly 4 for CMS	$744.00
7440 0613 9 Harness	Harness #4 for Model 500 CMS	$1,022.00
7440 0614 1 Harness #5	Harness #5 for Model 500 CMS	$344.00
7440 0615 4 Harness #1	Harness #1 for CMS	$190.00
7440 0616 6 PMM	Pixel Matrix Module Model 510 CMS	$271.00
7440 0618 0 PMM	Pixel Matrix Module Model 500 CMS	$142.00
7440 0619 2 Transformer	Transformer 5KVA for CMS	$298.00
7440 0620 4 Up Hand	LED Ped Signal Face Upraised Hand	$78.00
7440 0623 0 LED	200mm LED 8” Green Ball Type 1 Plug In Base	$59.00
7440 0625 5 LED	200mm LED 8” Yellow Ball Type 1 Plug In Base	$68.00
7440 0627 9 LED	200mm LED 8” Red Ball Type 1 Plug In Base	$33.00
7440 0629 3 LED	300mm LED 12” Green Ball Type 1 Plug In Base	$101.00
7440 0630 5 LED	300mm LED 12” Red Ball Type 1 Plug In Base	$49.00

NOTE: All items are expressed in unit or each. *Mark up has been applied.

0 % (SVS 218 - 12/04/03)

MODEL 170/2070 TRAFFIC CONTROL EQUIPMENT

7440 0634 3 LED	300mm LED Green Arrow Type 1 Plug In Base	$70.00
7440 0635 6 Arrow	300mm LED 12” Arrow Red Type 1 Plug In Base	$42.00
7440 0655 8 LED	300mm LED 12” Yellow Ball Type 1 Plug In Base	$64.00
7440 0656 0 LED	300mm LED 12” Yellow Arrow Type 1 Plug In Base	$39.00
7440-0657-2 LED	300mm LED 12” PV Green Type 2 Screw In Base (6” for 12” Head)	$88.00
7440-0658-4 LED	300mm LED 12” PV Yellow Type 2 Screw Base (6” for 12” Head)	$72.00
7440-0659-6 LED	300mm LED 12” PV Red Type 2 Screw In Base (6” for `12” Head)	$41.00
7440 0670 9 LED	Ped Signal Face (combination) Module	$110.00
7440-0672-3 CABI	BBS Cabinet External Batteries	$605.00
7440 0673 5 BBS	Battery Back Up System (External Battery)	1,495.00

FUTURE ITEMS:

7440 0660 8 LED	300mm LED 12” Green Bicycle Type 1 Plug In Base
7440 0661 0 LED	300mm LED 12” Yellow Bicycle Type 1 Plug In Base
7440 0662 2 LED	300mm LED 12” Red Bicycle Type 1 Plug In Base
7440 0663 4 LED	300mm LED 12” Lane Control Type 1 Plug In Base

*NOTE: PV = Programmed Visibility

NOTE: All items are expressed in unit or each. *Mark up has been applied.
0 % (SVS 218 - 12/04/03) File: Model 170EquipList.12/03

DEPUTY DIRECTIVE

Number: DD-23

Refer to Director's Policy: 06-Caltrans' Partnerships
07-Project Delivery
10-Departmental Commitments

Effective Date: 6-28-94

Supersedes: New

Title: Developing Special Funded Projects

POLICY

Caltrans strongly supports and works in partnership with cities, counties, local transportation authorities, transit agencies and private developers in the implementation of Special Funded Projects developed and funded by them on the State Highway System.

All projects on the State Highway System, regardless of funding, must adhere to Caltrans' standards, practices and procedures. Specific project roles and responsibilities from start of project development through construction are defined in the Developing Special Funded Projects Guidelines and are covered in the Cooperative Agreements established between the Department and the local entity sponsoring the project, or in a Highway Improvement Agreement with a private project sponsor.

BACKGROUND

The Department's policy for developing Special Funded Projects on the State Highway System was previously based on Sections 14529.11 through 14529.13 of the Government Code. These sections contained sunset clauses of January 1, 1992. AB 1602, Chapter 383, Statutes 1991 extended the sunset date of Section 14529.11 to January 1, 1994. All three sections have now expired. A Policy Memo (dated December 11, 1991, signed by R. P. Weaver) established that the procedures contained in Sections 14529.12 and 14259.13 were to remain policy with some minor changes. As these State/local/private partnerships continue to evolve, it is essential that all parties maintain a clear understanding of each other's roles and responsibilities. This Deputy Directive replaces and modifies the policy and procedure established in the expired statutes and the 1991 Policy Memo.

DEFINITION

A Special Funded Project includes: local sales-tax measure projects; locally funded projects; privately funded projects; public toll road facilities (not the privatization toll road projects) located on the State Highway System, that are developed and constructed using local or private funds. Other type of projects that are complementary to the Special Funded Projects include: encroachment permit projects, and jointly funded or cooperative projects.

Detailed definitions of Special Funded Projects, as well as encroachment permit projects and jointly funded or cooperative projects , including Caltrans' roles and responsibilities, are defined in the Developing Special Funded Projects Guidelines and in Chapter 3 "Roles and Responsibilities for Local and Private Entities" of the procedure manual for Special Funded State Highway Projects and other applicable Caltrans manuals.

RESPONSIBILITIES

District Directors and Deputy District Directors, in the spirit of partnership:

- Make commitments to Special Funded Project sponsors, based on Caltrans' having the resources available, and ensure the delivery of products, services, and oversight for which Caltrans is responsible as outlined in the policies, procedures, regulations and laws governing Caltrans.

- Assess that the project sponsor is financially able to see their proposed project through construction to completion before starting work on the Project Study Report.

- Provide adequate level of oversight of the special funded projects, and empower project managers and supervisors with the authority and responsibility to deliver products and services for which Caltrans is responsible.

- Ensure that District employees are responsive to the needs of the project sponsor, while keeping the best interest of Caltrans in mind.

- Appoint a project manager as a single point of contact between the project sponsor and Caltrans, and to coordinate with affected Caltrans units.

The Chief, Division of State and Local Project Development:

- Develops policy and procedures for project development of special funded projects.

- Oversees the Districts to ensure that agreements are executed in a timely manner and within the policies, procedures, and laws governing Caltrans.

- Acts as Caltrans' ombudsman for the Special Funded Program as outlined in the Local Programs Dispute Resolution Process.

Project Managers and Supervisors:

- Empower employees with the appropriate tools, resources, time and training to deliver the products and services for which Caltrans is responsible as outlined in all applicable Caltrans manuals and Cooperative Agreements or Highway Improvement Agreements.

- In partnership with the project sponsor re-prioritize commitments to ensure the successful delivery of both Caltrans' and project sponsor's projects.

- Communicate to their District Director and Deputy District Directors any changes or problems that could delay the successful delivery of a project.

Employees:

- Assist the Department in providing quality and timely products and services to the project sponsors.

- Communicate to their manager and supervisor any changes or problems that could delay the successful delivery of a project.

APPLICABILITY

All employees working on Special Funded Projects.

R. P. WEAVER
Interim Chief Deputy Director

State of California
Department of Transportation

Transportation Management Plan Guidelines

Prepared By:
Division of Traffic Operations
Office of Systems Management Operations

July 1, 2001

TABLE OF CONTENTS

I. INTRODUCTION

A. BACKGROUND

With the construction of California's state highway system virtually complete, the California Department of Transportation (Department) major emphasis on transportation projects has largely shifted from new construction to reconstruction, operation, and maintenance of existing facilities. As traffic demand steadily increases, Department work activities can create significant additional traffic delay and safety concerns on already congested highways. Planning work activities and balancing traffic demand with highway capacity becomes more critical.

In order to prevent unreasonable traffic delays resulting from planned work, Transportation Management Plans (TMPs) must be carefully developed and implemented in order to maintain acceptable levels of service and safety during all work activities on the state highway system.

B. WHAT ARE TRANSPORTATION MANAGEMENT PLANS?

A TMP is a method for minimizing activity-related traffic delay and accidents by the effective application of traditional traffic handling practices and an innovative combination of public and motorist information, demand management, incident management, system management, construction strategies, alternate routes and other strategies.

All TMPs share the common goal of congestion relief during the project period by managing traffic flow and balancing traffic demand with highway capacity through the project area, or by using the entire corridor. Certain low-impact Maintenance and Encroachment Permit activities do not require the development of individual TMPs. "Blanket" TMPs are developed for those activities. A blanket TMP is a generic list of actions that would be taken to keep delay below the delay threshold when performing activities on highways. Each district Maintenance and Encroachment Permit office should have a list of activities to which blanket TMPs apply.

All Capital projects require individual TMPs. Blanket TMPs are suitable for minor projects. Major TMPs are required for high-impact projects. Generally, major TMPs are distinguished by being:

- Multi-jurisdictional in scope, encompassing the Department of California Highway Patrol (CHP), city, county and regional governments, state DOTs, employers, merchants, developers, transit operators, ridesharing agencies, neighborhood and special interest groups, emergency services, and Transportation Management Associations;

- Multi-faceted, comprised of an innovative mix of traffic operations, facility enhancement, demand-management and public relations strategies, as well as more traditional work zone actions, construction methods and contract incentives, customized to meet the unique needs of the impacted corridor;

- In place over a longer period of time, sometimes implemented up to a year or more prior to the start of actual construction, with specific elements often implemented incrementally to coincide with construction phasing.

C. POLICY

Department Deputy Directive 60 (DD-60) titled Transportation Management Plans (see APPENDIX) requires TMPs and contingency plans for all state highway activities.

Policy Statement:

The Department minimizes motorist delays when implementing projects or performing other activities on the state highway system. This is accomplished without compromising public or worker safety, or the quality of the work being performed.

TMPs, including contingency plans, are required for all construction, maintenance, encroachment permit, planned emergency restoration, locally or specially-funded, or other activities on the state highway system. Where several consecutive or linking projects or activities within a region or corridor create a cumulative need for a TMP, the Department coordinates individual TMPs or develops a single interregional TMP.

TMPs are considered early, during the project initiation or planning stage.

Major lane closures require District Lane Closure Review Committee (DLCRC) approval.

Definitions:

Major lane closures are those that are expected to result in significant traffic impacts despite the implementation of TMPs.

Significant traffic impact is 30 minutes above normal recurring traffic delay on the existing facility or the delay threshold set by the District Traffic Manager (DTM), whichever is less.

Contingency Plans address specific actions that will be taken to restore or minimize effects on traffic when congestion or delays exceed original estimates due to unforeseen events such as work-zone accidents, higher than predicted traffic demand, or delayed lane closures.

II. TMP DEVELOPMENT AND IMPLEMENTATION

A. OVERVIEW

Responsibilities:

The DTM:

- Acts as the single focal point for all traffic impact decisions resulting from planned activities on the state highway system.
- Determines the extent of a TMP.
- Facilitates review and approval of TMP measures and planned lane closure requests.
- Directs the termination or modification of active planned lane closure operations when traffic impact becomes significant, without compromising traveler or worker safety.

The TMP Manager:

- Acts as the single focal point for development and implementation of TMPs.

The Construction Traffic Manager (CTM):

- Serves as a liaison between Construction, the DTM and the TMP Manager.
- Reviews the TMP and traffic contingency plan for constructability issues.
- Act as a resource for the Resident Engineer, DTM and TMP Manager during TMP implementation and reviews the contractor's contingency plan.

The extent of a TMP is determined by the DTM during the preliminary studies of a capital project. For all TMPs, an itemized estimate of the proposed strategies and their respective costs are included in the Project Study Report (PSR) or Project Study Scoping Report (PSSR) for proper funding consideration. The workload required to develop and implement TMPs is estimated in advance and captured in the district work plan.

For major TMPs, a TMP team may need to be formed and led by the TMP Manager. The itemized strategies and costs are further refined in the project report stage as determined by the TMP team and appropriate functional units using the most current geometric information available. Those elements of the TMP not included as part of the main construction contract should be itemized under State Furnished Material and Expenses using the appropriate Basic Engineers Estimate System (BEES) codes in the plans, specifications and estimates. During construction, TMP activities are to be monitored and evaluated by the TMP team and those elements found not to be cost effective should be modified as deemed appropriate or eliminated. The TMP process is explained in detail in the following sections.

B. FUNDING AND PROGRAMMING

When identifying funding for various TMP elements, it is important to distinguish between capital outlay and capital outlay support.

Work done by district staff for the planning and designing of TMP activities for capital projects are a normal part of the project development process and should be captured as capital outlay support. The TMP Manager and each functional manager should work closely with the project manager to ensure that TMP activities are included in all project work plans. TMP support activities to consider include ridesharing programs, Freeway Service Patrol (FSP) contracts, public awareness campaigns, parallel route improvements and the Request for Proposal (RFP) process up to award of the contract. Note that some of these activities may also have a capital component in addition to the support component discussed here. Workload hours for TMP activities must be included in the Capital Outlay Support (COS) project's work plan in order to be resourced (funded) by COS. These activities should then be charged to each project's expenditure authorization (EA), using the appropriate Work Breakdown Structure (WBS) code for that stage of the project. TMP-related work should be charged only to the WBS codes reserved for those activities. These codes can be found on the Department's Division of Project Management's Intranet web page.

Work done by district staff for implementing TMP elements during construction of capital projects are also a normal part of the project development process. Again, workload (hours) for implementing TMP activities must be included in the COS project's work plan in order to be resourced (funded) by COS. These activities should then be charged to the appropriate project's phase three EA, and WBS code 270 (Perform Construction Engineering and Contract Administration).

Some funds necessary to implement TMP elements not done by the Department staff, including consultant contracts, can be sourced from capital outlay funds allocated by the California Transportation Commission (CTC) as itemized in the plans, specifications and estimates. Some TMP elements, such as parallel route improvements and highway advisory radios, could be a phase of the construction contract or separate construction contracts while others such as public awareness campaigns and transit subsidies must be separate contracts or cooperative agreements.

The TMP elements that need to be in place prior to start of construction are identified and funded as stage construction or first order of work under a single package presented to the CTC. If approved, the Division of

Budgets may assign specific amounts for each TMP activity. All TMP activities may not necessarily be included under the main contract. Service contracts such as those for freeway service patrols, public service or consultant contracts, information campaigns, or establishing telephone hotlines must be arranged separately with consultants and other providers. For most projects, it takes four to six months to get a service contract in place. This means that all consultant contracts have been advertised, the consultant selected, and the contract ready for signature and award immediately following CTC allocation of funds. Other activities such as parallel route improvements are usually included in the main construction contract and as a first order of work under a cooperative agreement.

In some cases, the CTC can be petitioned to fund a portion of the TMP as an initial phase of the main project. This is usually for a high priority project where plans, specifications, and estimates for the main project are not yet finalized, but early funds are needed to initiate TMP activities such as making transit arrangements with local governments. The petition to fund an initial phase comes from the district, explaining why a portion of the project must proceed before funding for the main project is allocated. These early funds reduce the programmed funds for the main project accordingly.

The Federal Highway Administration (FHWA) supports the TMP concept and views major reconstruction projects as an excellent opportunity to initiate continuing traffic management strategies that provide improved traffic operations long beyond the completion of work. Examples include: installation of permanent Changeable Message Sign (CMS), full structural section shoulders, continuing auxiliary lanes, and wider shoulders for incident management during construction if cost-effective in the long term. All cost-effective transportation management activities that address the problem of delay or safety are eligible for 100 percent Federal Aid funding.

TMPs and contingency plans for Encroachment Permit projects are developed by the permittee or by Department staff. Staff time for development, review and implementation of TMPs for Encroachment Permits is charged to the permit. Maintenance normally develops TMPs for its projects; Maintenance and staff from other functional areas that expend time on Maintenance TMP charge to the designated Maintenance EA.

C. TMP IN PROJECT INITIATION DOCUMENT

The TMP is part of the normal project development process and must be considered in the Project Initiation Document (PID) or planning stage (project K phase). Since projects are generally programmed, budgeted, and given an Expenditure Authorization (EA) upon PID approval, it is important to allow for the proper cost, scope and scheduling of the TMP activities at this early stage of development. TMPs that are retrofitted to projects already programmed must be handled on a case by case basis and may require a contract change order.

Prior to PID approval, the initiating unit sends conceptual geometrics to the district Division of Operations for evaluation. The DTM estimates the extent of the TMP required and determines whether potential traffic delays are anticipated that cannot be mitigated by traditional traffic handling practices or well-planned construction staging. The TMP Manager must sign-off on the TMP DATA SHEET in the PID. A TMP cost estimate should be developed for each alternative being considered. An estimate should not be based only on the project cost. The cost of a TMP could range from a small percentage of project cost to 20 percent or more. Further guidance can be obtained from the following publications “Wilbur Smith & Associates TMP Effectiveness Study” and Frank Wilson & Associates “A Traffic Management Plan Study for State Route 91” located in Headquarters Traffic Operations, Office of System Management Operations.

TMP Elements

A list of potential TMP strategies with their respective elements is categorized in TABLE 1. As many different elements as are feasible should be considered for the proposed project's preliminary TMP.

When developing a preliminary TMP at this early stage, use the most current layout of the roadway (geometrics) information available and consider:

Contingency Plans
Lane closure policies and procedures
TMC coordination
Multi-jurisdictional communication and buy-in
CHP and local law enforcement involvement
Emergency closures
Clearance of alternate routes for STAA and oversized trucks
Special training or workforce development
Duration of construction (months)
Length of project (miles)
Number of major construction phases
Urbanization (urban, suburban, or rural)
Traffic volumes
Expected vehicle delay (from data sheet)
Public/media exposure
Political or environmental sensitivity
Business impacts and affected activity centers/employers
Percent trucks
Potential increase in accidents
Permit issues
Conflicting construction projects
Percent reduction in vehicle capacity
Special factors (if any)
Impact on Transit/Railroad services
Viability of alternative routes

Wilbur Smith Associate's TMP Effectiveness Study and Frank Wilson & Associate's A Traffic Management Plan Study for State Route 91 During Construction of HOV Lanes (both available from Headquarters Division of Traffic Operations, Office of System Management Operations) are excellent sources for guidance on selecting the most cost-effective TMP elements. The district Public Information office is also an experienced source for estimating the effectiveness of public information campaign options, and can help the TMP Manager estimate their cost and effectiveness in reducing traffic demand through the project area.

Public information campaigns serve two main purposes in TMPs. They inform the public about the overall purpose of the project to generate and maintain public support; and they encourage changes in travel behavior during the project to minimize congestion. Because they give travelers the information they need to make their own travel choices, public information campaigns can be the single most effective of all TMP elements.

The FSP is a congestion relief program of roving tow trucks operating in most metropolitan and some rural areas. The FSP program is operated by Regional Transportation Planning Agencies (RTPAs) with funding from the Department. The Department also reimburses the CHP for training and supervisory services provided for the FSP. The RTPAs contract with tow companies for commute time service and some weekend and mid-day service to assist motorists with simple repairs (i.e. flat tire, one gallon of gas) or tow the automobile from the highway.

FSP is available for incident management during construction. However, construction-related FSP service needs to be funded as part of the TMP. A cooperative agreement with the RTPA is required, outlining the services provided and the fund transfer. An interagency agreement with the CHP is required for any support services (field supervision and dispatch operator services). These agreements should be initiated with the RTPA and the CHP as soon as it is determined that FSP should be in the project TMP.

The Department's HQ Traffic Operations is currently working on Master Agreements with the RTPAs for future FSP services. This process will simplify the process for both the Department and the RTPAs by eliminating the need for a cooperative agreement for each project. Only a task order form will be needed for each project. A similar agreement is being created with the CHP. Please contact HQ Traffic Operations, Freeways Operations Branch for more information.

TABLE 1

TMP STRATEGIES AND THEIR ELEMENTS

A. Public Information
* Brochures and Mailers
* Media Releases (including Minority Media Sources)
* Paid Advertising
* Public Information Center
* Public Meetings/Speaker's Bureau
* Telephone Hotline
* Visual Information (videos, slide shows, etc.)
* Total Facility Closure
* Local cable TV and News
* Traveler Information Systems (Internet)
* Internet

B. Motorist Information Strategies
* Electronic Message Signs
* Changeable Message Signs
* Extinguishable Signs
* Ground Mounted Signs
* Commercial Traffic Radio
* Highway Advisory Radio (fixed and mobile)
* Planned Lane Closure Web Site
* The Department's Highway Information Network (CHIN)
* Radar Speed Message Sign

C. Incident Management
* Call Boxes
* Construction or Maintenance Zone Enhanced Enforcement Program – COZEEP or MAZEEP
* Freeway Service Patrol
* Traffic Surveillance Stations (loop detectors and CCTV)
* 911 Cellular Calls
* Transportation Management Centers
* Traffic Control Officers
* CHP Officer in TMC during construction
* Onsite Traffic Advisor
* CHP Helicopter
* Traffic Management Team

D. Construction Strategies
* Incentive/Disincentive Clauses
* Ramp Metering
* Lane Rental
* Off peak/Night/Weekend Work
* Planned Lane/Ramp Closures
* Project Phasing
* Temporary Traffic Screens
* Total Facility Closure
* Truck Traffic/Permit Restrictions
* Variable Lanes
* Extended Weekend Closures
* Reduced Speed Zones
* Coordination with Adjacent Construction
* Traffic Control Improvements

E. Demand Management
* HOV Lanes/Ramps
* Park-and-Ride Lots
* Parking Management/Pricing
* Rideshare Incentives
* Rideshare Marketing
* Transit Incentives
* Transit Service Improvements
* Train or Light-Rail Incentives
* Variable Work Hours
* Telecommute
* Shuttle Service Incentives

F. Alternate Route Strategies
* Ramp Closures
* Street Improvements
* Reversible Lanes
* Temporary Lanes or Shoulder Use
* Freeway to Freeway Connector Closures

G. Other Strategies
* Application of new technology
* Innovative products
* Improved specifications
* Staff Training/Development

If the DTM determines that a major TMP is required, the TMP Manager forms a TMP development team. The team's membership will vary according to the TMP elements proposed and the project's impacts. At a minimum, it should include representatives from Construction, Public Affairs, Project Development, Traffic Operations (including Transportation Permits), the CHP and local agencies. Others to be considered as the plan gets refined are Rideshare, Transportation Planning, Public Transportation, Maintenance, Structures, CHP, local law enforcement, local transit agencies, emergency services, and FHWA. Local Maintenance field staff familiar with conditions in the project area should be team members or should be consulted as needed as the TMP develops.

D. TMP IN PROJECT REPORT

As more information becomes available during the project report phase the preliminary scope and cost of the overall TMP and the individual elements should continue to be refined. The TMP team will coordinate the TMP strategies with the project engineer and appropriate units, with each team member handling their area of expertise. For major projects, subcommittees or task forces may be formed to handle the planning, implementation, monitoring, and evaluation details of some elements. The TMP Manager will keep the Project Manager and district Construction Coordinator updated and must sign-off on the TMP data sheet of the project report.

It is appropriate at this point to develop a timeline schedule for major TMPs keeping in mind that many elements of the TMP have to begin prior to the start of construction. Many TMP elements listed in Table 1 need to be developed separately but concurrently with the project plans. They may be bid and constructed or initiated separately from the project or be included in the project plans and be installed or implemented as the first order of work.

Some tasks may take a long time depending on the complexity of the major project and the type of transportation management necessary. For example, if building new park-and-ride lots are necessary for the Ridesharing element, the planning phase would have to be extended for several months and a design phase added.

An additional activity involves analyzing the existing traffic volume in the corridor, both on the freeway and surface streets. This will provide a basis for establishing the goal of the TMP, i.e., the number of vehicles that should be removed from the freeway, and in determining the capability of the surrounding surface streets to handle the additional traffic demand. It can also provide a database for evaluating the overall effectiveness of the TMP.

E. TMP IN PS&E

Those TMP elements that are not part of the main contract, but are identified as capital outlay costs tied to the main project, should be itemized as State Furnished Materials and Expenses using the appropriate BEES item cost (see TABLE 2). The Project Engineer should consult with the TMP Manager to ensure that the appropriate "Maintaining Traffic" Standard Special Provisions (SSP) are included in the PS&E. The SSPs should always require the contractor to submit a contingency plan.

The TMP and PS&E should address oversize and overweight vehicles traveling under a transportation permit. Additional construction area signs should be provided that restrict travel to overwidth vehicles whenever the lateral clearance drops to 15 feet or less.

The DTM must concur with the PS&E and with Encroachment Permit and Maintenance TMPs.

TABLE 2
TMP BEES ITEM CODES

066003	State Furnished Materials
066004	Miscellaneous State Furnished Materials
066005	Concurrent Work
066006	Miscellaneous Concurrent Work
066008	Incentive Payment
066009	Utility Expense
066010	Work by Others
066060	Additional Traffic Control
066061	CHP Enhanced Enforcement
066062	COZEEP Contract
066063	Traffic management plan – public Information
066064	Specter Radar Unit
066065	Freeway Service Patrol
066066	Public Transit Support
066069	Rideshare Promotion
066070	Maintain Traffic
066072	Maintain Detour
066074	Traffic Control
066076	Temporary Traffic Control
066077	Install Traffic Control Devices
066578	Portable Changeable Message Signs
066825	Temporary Striping
066872	Service Contract
128602	Traffic Control System (One Way)
128650	Portable Changeable Message Signs
129150	Temporary Traffic Screen
861793	Telephone Service (Location 1)
860811	Detector Loop
860925	Traffic Monitoring Station (Count)
860926	Traffic Monitoring Station (Speed)
860927	Traffic Monitoring Station (Incident)
860930	Traffic Monitoring Station
861088	Modify Ramp Metering System
861985	Travelers Information system
869070	Power and Telephone Service
991046	Public Address System
991047	Telephone Facility
994920	Bicycle Parking Rack
995000	Bus Shelter
995002	Bus Passenger Shelter (Type S-1)
995004	Bus Passenger Shelter (Type SM-1)
995005	Bus Passenger Shelter (Type LM-1

F. TMP DURING CONSTRUCTION AND MAINTENANCE OPERATIONS

During construction, those TMP elements that are part of the main contract or Encroachment Permit are implemented under the general direction of district Construction or Encroachment Permits. Those separate contracts/agreements such as for rideshare and transit activities and public awareness campaigns will be under the direction of their respective contract managers.

Special effort should be given to assure that Changeable Message Sign (CMS), Highway Advisory Radio ()HAR) and other media tools provide accurate and timely information to motorists regarding lane closure times and
TMP elements must be carefully monitored for cost effectiveness. The TMP team should determine whether the implemented measures are reaching the predetermined goals for cost effectiveness. If an element's predetermined goal is not immediately reached during implementation, but there is a general trend toward meeting that goal, the element can remain in effect and the FHWA will continue to participate. Elements that show no sign of approaching their predetermined goals as determined by the TMP Manager must be modified as deemed appropriate or dropped.

Contractor compliance with lane closure pickup deadlines can be enforced in two ways. A "maintaining traffic" SSP allows a penalty to be assessed to the contractor for value of traffic delay when the contractor exceeds the lane closure window. The minimum penalty is $1,000 per 10 minutes, but it can greatly exceed the minimum, depending on traffic volumes and the highway facility. The DTM calculates the "delay penalty" during PS&E. The second method is for the state representative to suspend the contract work.

A contractor or the Department forces (such as Maintenance) can be ordered to pick up a lane closure early if traffic impacts become significant either due to a project incident or activities outside the project area. Early pickup should only be ordered when traveler and worker safety will not be compromised. The "maintaining traffic" SSPs for capital projects provide for compensating contractors for early pickup. Encroachment Permit provisions require the permittee to pick up a closure early without compensation.

DTM's are to ensure that lane closures will not be terminated early, or may be extended beyond the lane closure window when the activity needs to be completed for the safety of the public or workers. These activities may include structure inspections and repairs, guardrail repairs, culvert replacement.

In order to avoid significant traffic impacts, it is essential to monitor and respond immediately to delay, pick up closures on time, and have solid traffic and contractor contingency plans.

A Department staff member who can make informed decisions about implementing contingency plans and modifying, terminating or extending approved lane closures should be available to respond to significant delays and other unexpected events whenever lane closures are in place. The designated employee(s) may be Traffic Operations, Construction, or TMC staff, depending on the district.

At the end of the project a post-TMP evaluation report must be completed by the TMP Manager for all major TMPs and for TMPs where the actual delay exceeded the threshold set by the DTM. Post-TMP meetings with the CHP and other partners can be held to identify what went well and what could have been done differently. Samples of past TMP reports can be obtained from headquarters' Traffic Operations, Office of System Management Operations and from the DTM.

Contingency Plan

Both traffic and contractor contingency plans are required for all planned work. Both blanket and individual TMPs must include contingency plans. The traffic contingency plan, prepared by the Department or a consultant, addresses specific actions that will be taken to restore or minimize affects on traffic when the congestion or delay exceeds original estimates due to unforeseen events such as work-zone accidents, higher than predicted traffic demand, or delayed lane closures. The contractor contingency plan addresses activities under the contractor's control in the work zone. After the contractor's contingency plan is submitted and approved, it becomes part of the TMP contingency plan.

The TMP contingency plan should include, but is not limited to the following:

- Information that clearly defines trigger points which require lane closure termination (i.e., inclement weather, length of traffic queue exceeds threshold;
- Decision tree with clearly defined lines of communication and authority;
- Specific duties of all participants during lane closure operations, such as, coordination with CHP or local police, etc.;
- Names, phone numbers and pager numbers for the DTM or their designee, the Resident Engineer (RE), the Maintenance Superintendent, the Permit Inspector, the on-site traffic advisor, the CHP Division or Area Commander, appropriate local agency representatives, and other applicable personnel;
- Coordination strategy (and special agreements if applicable) between DTM, RE, on-site traffic advisor, Maintenance, CHP and local agencies;
- Contractor's contingency plan;
- Standby equipment, State personnel, and availability of local agency personnel for callout (normally requires a Cooperative Agreement);
- Development of contingencies based on maintaining minimum service level.

G. RETROFITTING PROGRAMMED PROJECTS

Usually the extent of the TMP is to be determined prior to programming (PID approval). However, it may sometimes be necessary to retrofit a TMP to a project that is already programmed due to project changes, policy changes, emergencies or unforeseen conditions. These projects must be handled on a case by case basis since the course of action will depend on how far along the project development process is and how extensive the TMP needs to be. Retrofitted TMPs may require a TMP team and TMP Manager and involvement from all functional units as discussed earlier in these guidelines. The project manager is responsible for initiating a TMP investigation since they are most knowledgeable of project status. Some suggestions for funding retrofitted TMP are:

Use of Minor Funds

Minor A and B money has been used to pay for TMP measures that total less than $1,000,000. The districts will not usually be reimbursed for this even though the FHWA agrees to participate (it is not economically feasible for the Department to process minor funds for reimbursement). There have been exceptions however, and that decision is at the discretion of the Federal Resources Branch in headquarters Budgets Program.

Charge to Other Project Phase 4 (Construction) Funds

Funds from other construction contracts in the district may be used if those projects are in the vicinity of, or will be affected by, the project requiring TMP funds. At the discretion of the Deputy District Director for Construction a list of chargeable project EAs may be submitted to headquarters Accounting for prorated charging. Very few Accounting staff are aware of the process required and headquarters Traffic Operations, Office of System Management Operations should be contacted for assistance.

Project Cost or Scope Changes

The CTC has delegated to the Director of the Department the authority to increase a project's cost by up to 20 percent without prior commission approval. This authority has been delegated to other Department managers as described in Project Management Directive PMD6. This increase can be used for TMP implementation and will be 100 percent reimbursable by the FHWA. The increased costs must be absorbed by other projects in the district since the total capital outlay allocation remains the same.

H. LOCAL INVOLVEMENT

The TMP Deputy Directive 60 applies to all projects on state facilities, including those not funded by the state. District Directors are responsible for assuring local compliance. Since many measure projects are split funded, the Department and local entities must work cooperatively to develop an effective TMP. The Department is responsible for approving all PSRs and it is at this point that agreements should be reached concerning the costs and scope of TMP measures.

III. CORRIDOR, REGIONAL AND MULTI-FUNCTIONAL AREA TMPS

When multiple or consecutive projects are within the same general corridor, the cumulative impact can result in excessive traffic delays and detour conflicts. These may be multiple capital projects, the involvement of more than one district, or a combination of capital projects and Encroachment Permit and/or Maintenance activities. Corridor or regional coordination will minimize or eliminate these impacts and reduce inconvenience to the motoring public.

When multiple projects are in the same corridor or on corridors within the same traffic area, it may be possible to develop a single corridor or regional TMP. In other cases, individual TMPs are developed and funded from their own sources, and a bare-bones corridor or regional TMP addresses the cumulative impact. Each project covered by corridor and regional TMP contributes resources in proportion to its traffic impact. During TMP implementation, the TMC serves as an information clearinghouse and coordinates operations. The TMC helps identify conflicts and recommends appropriate action. When provided with accurate and up-to-date lane closure information the TMC provides real-time traffic information via electronic media, CMS, and HAR.

The TMP Manager coordinates the development and implementation of corridor and regional TMPs. The TMP Manager forms a TMP team including, as a minimum, representatives from Construction, Maintenance, Public Affairs and Traffic Operations for each of the affected districts. The initial meeting is held several months in advance of the construction season to set milestones, and allow time to gather project information and prepare and distribute information.

The corridor/regional TMP may need elements in addition to those provided by the individual TMP for each project. Those elements may include changeable message signs at key locations outside individual project limits, the establishment of an information hot line and web-sites for all projects involved. The use of the statewide Caltrans Highway Information Network (CHIN) number (1-800-427-ROAD), and particularly the use of TMCs as a central reporting hub. The Northern Valley TMC in District 3 has established reporting procedures specifically for interregional TMPs that are obtainable from headquarters Traffic Operations.

IV. MAJOR LANE CLOSURE APPROVAL PROCESS

This process applies to all major lane closures on the state highway system. Major lane closures are those lane closures that are expected to result in significant traffic impacts despite the implementation of TMPs. A “significant traffic impact” is defined in DD-60 as (a) 30 minutes above normal recurring traffic delay on the facility, or (b) the delay threshold set by the DTM, whichever is less. When a planned lane closure is expected to have a significant traffic impact, Headquarters District Lane Closure Review Committee (DLCRC) review and approval is required. The functional unit directly involved in the work must submit the major lane closure request to the DLCRC for approval as detailed below.

A traveler’s trip should not be increased by more than 30 minutes due to planned Department activities. The DTM may set a lower maximum if the economic impact of a delay over 20 minutes would be high. The lesser of these delay limits is the maximum delay threshold allowed for any activity. Only the DLCRC can approve a higher delay threshold for a project.

Additionally, it should be noted that TMP activities are comprehensive, and involve actions in addition to traffic management through the work zone, as detailed in these TMP Guidelines. All lane closure operations and other planned activities should be evaluated at the earliest possible developmental stage for potential impacts and mitigation strategies. Pre-implementation meetings and contingency plans remain important aspects of all lane closure operations to minimize impacts of unforeseen events.

A. THRESHOLD CRITERIA FOR LANE CLOSURES REQUIRING APPROVAL OF THE DLCRC

DLCRC review and approval is required when planned activities are expected to result in a traffic delay that exceeds 30 minutes or the delay threshold set by the DTM, which ever is less.

DLCRC review and approval is not required for emergency closures due to natural events or incidents. However, the DTM must be notified, and every effort must be made to minimize traveler delay and reopen traffic lanes as soon as practical.

Applicability

The DLCRC, comprised of the CHP, District Public Information Officer, and Deputy District Directors of Construction, Design, Maintenance and Operations, approves all requests for major lane closures that meet the above threshold criteria. The criteria are applicable for moving or static lane closure operations. The DLCRC will decide when to submit lane closure requests that are of an interregional, statewide, environmental, or otherwise sensitive nature to the Headquarters Lane Closure Review Committee (HQLCRC) for their approval.

The DLCRC is responsible for determining when HQLCRC approval is required. The HQLCRC is comprised of the Division Chiefs for Construction, Maintenance, Design and Local Programs, and Traffic Operations along with the Headquarters Public Information Officer, and a representative from the CHP. The HQLCRC may review the closure or leave the decision to the DLCRC. The HQLCRC should be advised of all planned lane closures that exceed the above threshold criteria. All planned lane closures that exceed the above threshold criteria and are of an interregional, statewide, environmental, or otherwise sensitive nature, as determined by the district LCRC, may also require approval of the HQLCRC.

Contents of Major Lane Closure Request Submittal

The functional unit requesting the lane closure and responsible for its performance prepares a proposed lane closure submittal. Sufficient information is provided to ensure complete understanding of the proposal. The submittal is sent through the DTM for review before sending it on to the LCRC. If additional TMP efforts can reduce the expected additional delay to less then 30 minutes, then the closure does not have to go to the LCRC. The DLCRC/HQLCRC may require additional information during its review. At a minimum, the following information is recommended initially:

1. Location and vicinity maps showing the state highway(s), local street network, and other adjacent lane closures or nearby work that may affect traffic during the same period, including special events;
2. Dates, times and locations of the lane closure(s);
3. Brief description of the work being performed during the lane closure(s);
4. Brief description of each lane closure and its anticipated affect on traffic;
5. Amount of expected delay and corresponding queue length for each lane closure;
6. Summary of TMP strategies that will be used to reduce delay and motorist inconvenience during the lane closure(s) (refer to Table 1). A copy of the approved TMP for the project, if available;
7. Contingency plan (see "Contingency Plan" below).

B. EVALUATION

The LCRC is responsible for approving major lane closures and will use the items below for evaluating lane closure operations. In its evaluation of the proposal, the LCRC will give consideration to the accuracy, reliability, and completeness of information provided as well as other reliable sources of information available to the LCRC.

Proposals will be evaluated on the basis of effectiveness in the following areas:

- Promoting motorist and worker safety;
- TMP strategies;
- Plans for coordination with adjacent construction, maintenance, encroachment permits, and special events;
- Plans for coordination with TMC and field personnel;
- Plans for coordination with public media;
- Plans for use of existing field elements such as traffic surveillance loops, changeable message signs, highway advisory radio, and Closed Circuit Television cameras;
- Lines of communication and authority (top to bottom);
- Plans for monitoring delay (or corresponding queue length) during lane closure operations;
- Alternatives to proposed closures;
- Viability of contingency plans;

C. POST-CLOSURE EVALUATION STATEMENT

A Post-Closure Evaluation statement will be submitted to headquarters' Traffic Operations Program, Office of System Management Operations, on all projects that exceed expected delay or run outside of the closure window. No more than one page is suggested. The functional unit performing the lane closure will prepare the statement within five working days of the date the lane closure exceeded the threshold criteria. The statement should explain:

- The cause and impact of delays;
- Either actions taken or to be taken to avoid or mitigate an occurrence or recurrence;
- Why the expected delay was exceeded and/or why it was necessary to exceed the closure window;
- How the situation can be avoided in the future.

Post-closure evaluation statements are only for closures formally approved by the District LCRC under this process (i.e. exceed the lesser of 30 minutes or the DTM limit).

D. HEADQUARTERS CONTACT

For further guidance on this process you may contact:
Mr. Robert Copp, Chief
Office of System Management Operations
Traffic Operations Program MS #36
Phone (916) 654-6912 or Calnet 464-6912

DEPUTY DIRECTIVE

Number: DD-60

Refer to Director's Policy:
03-Safety and Health
05-Multimodal Alternatives Analysis
08-Freeway System Management

Effective Date: 6-15-00

Supersedes: P&P 89-04

Title: Transportation Management Plans

POLICY

Caltrans minimizes motorist delays when implementing projects or performing other activities on the State highway system. This is accomplished without compromising public or worker safety, or the quality of the work being performed.

Transportation Management Plans (TMPs), including contingency plans, are required for all construction, maintenance, encroachment permit, planned emergency restoration, locally or specially-funded, or other activities on the State highway system. Where several consecutive or linking projects or activities within a region or corridor create a cumulative need for a TMP, Caltrans coordinates individual TMPs or develops a single interregional TMP.

TMPs are considered early, during the project initiation or planning stage.

Major Lane Closures require District Lane Closure Review Committee approval.

DEFINITION/ BACKGROUND

A *TMP*, when implemented, results in minimized project-related traffic delay and accidents by the effective application of traditional traffic mitigation strategies and an innovative combination of public and motorist information, demand management, incident management, system management, alternate route strategies, construction strategies, or other strategies.

Major Lane Closures are those that are expected to result in *significant traffic impacts* despite the implementation of TMPs.

Significant traffic impact is 30 minutes above normal recurring traffic delay on the existing facility or the delay threshold set by the District Traffic Manager, whichever is less.

Contingency Plans address specific actions that will be taken to restore or minimize effects on traffic when congestion or delays exceed original estimates due to unforeseen events such as work-zone accidents, higher than predicted traffic demand, or delayed lane closures.

RESPONSIBILITIES

District Directors:

- Ensure TMPs are considered early for all projects and activities performed on the State highway system.

- Enforce and advocate TMPs and lane closure policies to ensure compliance with established procedures, guidelines, and policies.

- Consider the cumulative impact of multiple projects. Recognize the need for and oversee implementation and coordination of interregional TMPs between corridors, districts, neighboring states, and Mexico.

- Ensure that TMP planning and implementation is coordinated with the California Highway Patrol (CHP).

- Ensure capital outlay support resources for TMP activities are provided in District workplans.

District Traffic Manager:

- Act as the single focal point for all traffic impact decisions resulting from planned activities on the State highway system.

- Determine the need for and extent of a TMP.

- Facilitate review, approval, modification, or disapproval of all TMP measures and planned lane closure requests on the highway system.

- Direct the termination or modification of active planned lane closure operations without compromising the safety of the public or workers, when traffic impact becomes significant.

TMP Manager

- Act as single focal point for development and implementation of TMPs.

District Encroachment Permit, Design, Maintenance, and Project Engineers:

- Ensure TMPs are fully incorporated in the development of project plans, specifications and estimates.

District Project Manager:

- Designate project resources for all TMP measures and activities.

- Inform the DTM of all projects that may require a TMP in any phase of their development and coordinates scheduling of projects to minimize or eliminate conflicting construction activities.

- Recognize and advocate TMP development, implementation and conflict resolution from project initiation through construction.

District Construction Engineers, Resident Engineers, Encroachment Permit Inspectors, Oversight Engineers, and Maintenance Supervisors/Superintendents:

- Work to insure necessary TMP measures are planned for and implemented.

- Work with the District Traffic Manager (DTM) to insure that project activities conform to the TMP, contingency plans are implemented if necessary, and traffic delay is minimized and does not exceed allowable limits.

- Ensure Contractor is prepared to comply with TMPs as related to its performance of work.

- Notify District communication centers or District Transportation Management Center (TMC) of significant traffic impact due to a planned lane closure.

- Coordinate work activities with CHP.

APPLICABILITY

- All Caltrans employees involved in development and implementation of TMPs.

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TONY HARRIS
Chief Deputy Director

State of California
Department of Transportation

GUIDELINES
FOR TYPICAL SURVEY GRID FOR UTILITIES INSTALLED WITHIN STATE RIGHT-OF-WAY

SURVEY GRID NOTES:

Survey data is to be collected at the specified points along the casing alignment at the following times:

1. **Prior to Start of Work.**
2. **Mid-point to the Completion of Work.**
3. **Completion of Work.**
4. **Six (6) months after the Date of Completion.**

Or, as required by the Department.

LEGEND:

Survey Data Point ⊗

Direction of Travel →

Casing ○ **Or** ▭

NOTES:

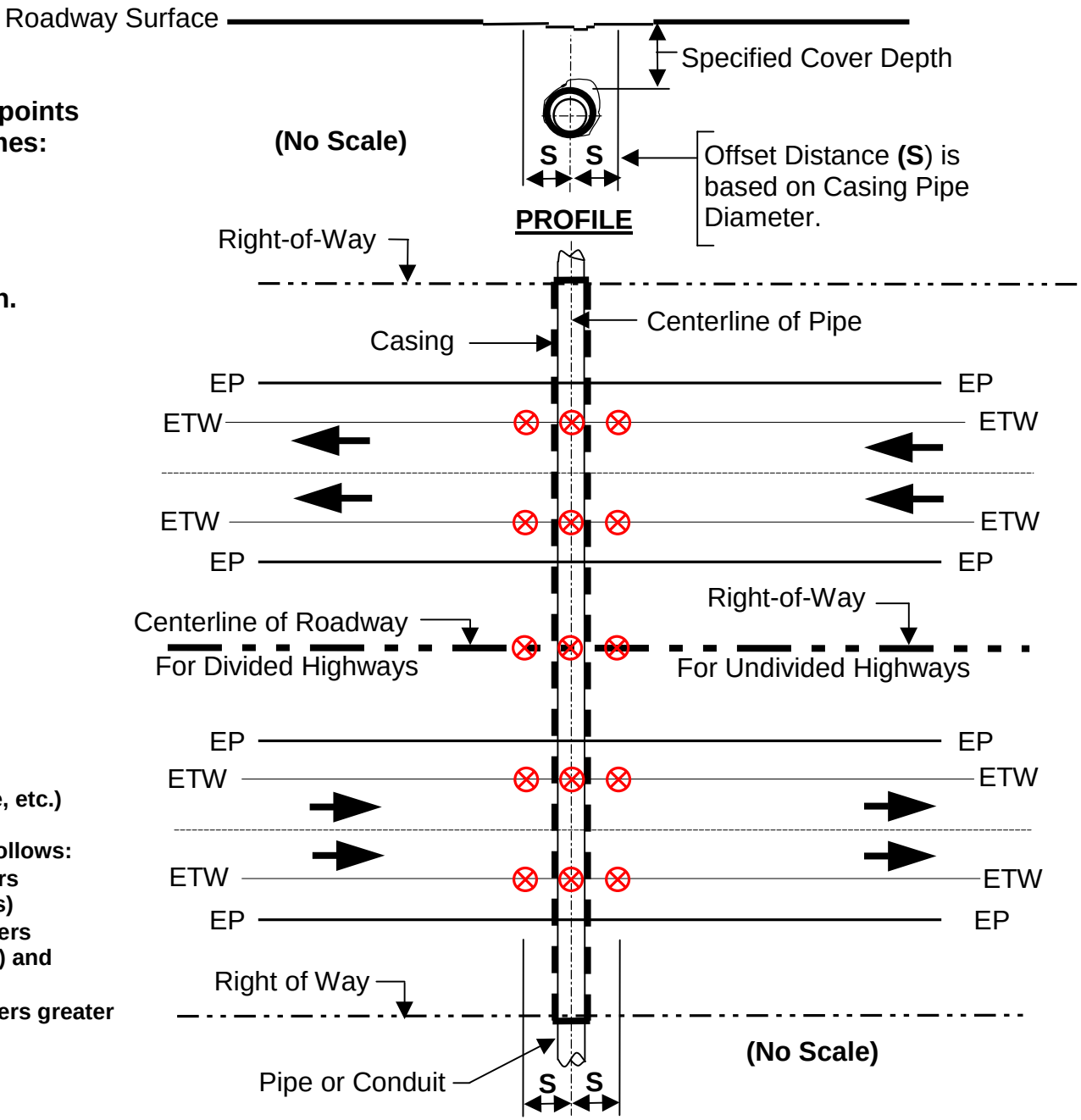
EP = Edge of Pavement

ETW = Edge of Travel Way (i.e., Fog Line, Yellow Stripe, etc.)

S = Offset Distance away from the pipe alignment, as follows:

- **5 feet (1.5 meters) for casing pipe diameters less than 30 inches (760 millimeters)**
- **10 feet (3.0 meters) for casing pipe diameters between 30 inches (760 millimeters) and 72 inches (1,830 millimeters)**
- **15 feet (4.6 meters) for casing pipe diameters greater than 72 inches (1,830 millimeters)**

REV. 07/16/03



CALTRANS
ENCROACHMENT PERMITS

GUIDELINES AND SPECIFICATIONS

FOR

HORIZONTAL DIRECTIONAL DRILLING INSTALLATIONS

EFFECTIVE JANUARY 1, 2000, LOCATING AND TRACKING OF THE REAMER DURING THE BACK-REAMING PROCESS IS REQUIRED.

HDD Specifications Developed By:
CALTRANS
Headquarters Office of Encroachment Permits

JULY 14, 2003

TABLE OF CONTENTS

FOREWARD

HORIZONTAL DIRECTIONAL DRILLING: TECHNOLOGY, INSTALLATION TECHNIQUES, AND APPLICATIONS

Consultants, contractors, owners, and research institutes from across North America developed these guidelines and specifications for the installation of pipelines and conduits in an urban environment using horizontal directional drilling technology. Several design *rules of thumb* have also been incorporated in order to provide the necessary tools to differentiate between a borehole design, which enhances the probability of a successful installation, or a design which may result in installation difficulties.

Perhaps the fastest growing technology, which has taken the Trenchless Construction Industry over by storm in the past decade. Horizontal directional drilling (HDD) in North America has grown from 12 operational units in 1984 to more than 2000 units operating in 1995.

Equipment and installation techniques used by HDD contractors evolved by merging technologies from the utility, oil field, and water well industries. Currently, a wide range of directional boring units exist in the market place, from mini drilling rigs, which are used for the installation of 50mm (2 in.) utility conduits to maxi rigs, which are capable of installing 1200mm (48 in.) sewer lines. Installation range is determined by many parameters, including rig size, soil conditions and product diameter. Installations as long as 1830m (6000 ft) are known to have been successfully completed. Current commercial HDD equipment can operate in a wide range of soil conditions, from extremely soft soils to full face rock formations with unconfined compressive strengths of 28 MPa (40,000 psi).

Advantages such as reducing disturbance to traffic, businesses and the elimination of restoration costs make this technology an attractive alternative to open excavation for the installation of utility services. Recently, installations of water and sewer force-mains using HDD have been completed in Canada and the United States. While some of these projects involved the crossing of rivers or major traffic corridors, others involved the installation of pipeline products in difficult soil conditions or beneath existing structures.

The installation of gravity sewers, with an acceptable grade accuracy can be maintained during the installation. The ability to install pipes at tight grade tolerances using HDD was made possible by recent improvements in the equipment's locating and tracking accuracy, information feedback capabilities, and increased operational depth of the "walk-over" locating system.

ADVANTAGES of HDD

Traditionally, installation of underground utilities involved open trenching. The contractor had to excavate around existing utilities to get to the required depth. Often sidewalks, pavement, brick paving, sod or other surfaces must be replaced, including the interruption and inconvenience of traffic and the disruption of nearby commercial activities with open cut trenches that must be backfilled.

Excavation requirements in horizontal directional drilling are minimal or non-existent. In crowded urban areas, horizontal directional drilling is increasingly viewed as the preferred technology by virtue of its decreased surface disruption. It minimizes the negative impact on residents, businesses, and eliminates the need for removal, restoration and long-term costs

associated with trench settlement are avoided. In open areas, horizontal drilling provides an efficient method for crossing obstacles such as rivers, highways, rail tracks or an active runway.

Vertical shafts **are not** required as drilling commences from the surface. HDD equipment requires a relatively short set-up time, a mini rig can be set up and start boring within an hour. Labor requirements are minimal, as it only takes a two-man crew to operate a small drilling rig. Finally, the borehole profile does not necessarily have to be straight, as it is possible to change the borehole elevation and alignment to avoid existing utility lines.

Other advantages of horizontal directional drilling include:

1. It allows for operation in sensitive soil conditions or environmentally sensitive areas with minimum disturbance to the surrounding environment.

2. It eliminates the cost and time associated with installing de-watering facilities for operations carried out below the ground water table level.

3. Year-round construction is possible.

4. It improves safety by requiring fewer people on-site, reducing possible exposure to contaminants (on environmental projects) and eliminating the risk of cave-ins.

Current applications of directional drilling are outlined in the following section.

APPLICATIONS

The market for horizontal directional drilling is experiencing a continuous growth worldwide, with services provided to a broad base of industries. Applications for horizontal directional drilling include:

Utilities

The installation of utility conduits in urban areas and across rivers and highways is the “bread and butter” of the horizontal directional drilling industry. Over the last five years, utility companies have used horizontal directional drilling extensively for the installation of new networks of power, natural gas and telecommunications (Figure 1).

Municipal Applications

Recent advancements in equipment and tracking systems make the use of HDD cost efficient for projects that involve larger diameter products and stricter placement tolerances, as in the case of many municipal applications.

Pipelines

The oil, gas and petro-chemical industries are another utilizing the directional drilling industry.

Others

The unique characteristics of HDD technology allow it to be applied in many other applications, including slope stability, site investigation, ground stabilization, de-watering, and pipe-reaming.

THE DIRECTIONAL BORING UNIT

The HDD drill rig provides torque, thrust, and pullback to the drill string. The drill drive assembly resides on a carriage that travels under hydraulic power along the frame of the drill rig.

The thrust mechanism for the carriage can be a cable, chain or screw, or a rack and pinion system. Table I, lists the three general categories of drilling rigs used in the industry.

Small Rigs are mounted on a trailer, truck, or self-propelled track vehicle (Figure 1). These systems are designed for drilling in relatively soft semi-consolidated formations and are used primarily for installation of utility conduits in congested urban areas. They are not suitable for drilling gravel, cobble or other formations where borehole stability is difficult to maintain.

Medium drilling rigs are used to install conduits and pipelines up to 400mm (16”) in diameter. Average installation distance may range from 150 to 600m. They are particularly suitable for the installation of municipal pipelines, as they are sufficiently compact to be used in urban areas, while at the same time they have the capacity to install relatively large diameter products beneath highways, subdivisions, and rivers. Bores can be installed in unconsolidated to consolidated sediments.

Large rigs typically involve a large operation with multiple trailer-mount support equipment and substantial mobilization and demobilization periods.

High operating costs make their use somewhat prohibitive in the utility installation market; and they are employed primarily in the pipeline and resource exploration industries. These large units may be used in the installation of large diameter products (24”-48”) or exceptionally long boreholes (over 1000m).

Table I: Typical Characteristics of HDD Rigs (May 1994)

	SMALL RIGS	MEDIUM RIGS	LARGE RIGS
Thrust/Pullback	< 20,000 lbs.	20,000 - 80,000 lbs.	> 80,000 lbs.
Maximum Torque	< 2000 ft./lbs.	2000 - 20,000 ft./lbs.	> 20,000 ft. lbs.
Drilling Speed	> 130 RPM	130 - 200 RPM	< 200 RPM
Carriage Speed	> 100 ft/min.	90 - 100 ft./min.	< 90 ft./min.
Carriage Drive	Cable or Chain	Chain or Rack & Pinion	Rack & Pinion
Drill Pipe Length	5-10 ft.	10 - 30 ft.	30 - 40 ft.
Drilling Distance	< 700 ft.	700 - 2000 ft.	> 2000 ft.
Power Source	< 150 HP	150 - 250 HP	>250 HP

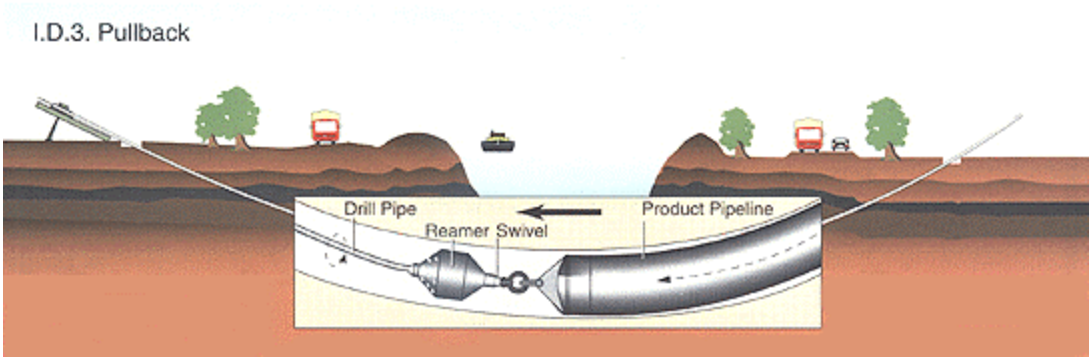
BORE INSTALLATION

The pilot bore is launched from the surface and proceeds downward at an angle until the necessary depth is reached. The path of the bore is gradually brought to a horizontal position and the bore head is steered to the designated exit point, where it is brought back to the surface following a curved path.

During the drilling process, the bore path is traced by interpretation of electronic signals sent by a monitoring device located near the head of the drilling string. At any stage along the drilling path, the operator receives information regarding the position, depth and orientation of the drilling tool, allowing him to navigate the drill head to its target.

After the pilot string breaks the surface at the exit location, the bit is removed from the drill string and replaced with a back-reamer. The pilot borehole is then back-reamed, enlarging the hole to the desired diameter while simultaneously pulling back the line product behind the reamer.

Figure 2: Typical Pull Back Operation (DCCA, 1996)



The above description is typically referred to as a “continuous” borehole (Fig. 2). In some instances it is desired to drill a single-ended borehole, commonly named a “blind borehole”. Here construction, reaming and all other activities take place at the location of the entry pit.
This type of installation is more complicated and expensive than the “continuous” borehole described above, and is used only in environmental applications for either collecting soil samples or installing horizontal wells beneath structures. During the boring process drilling fluid is injected under pressure ahead of the advancing bit. The drilling fluid creates a ‘mud cake’ along the perimeter of the borehole, thus stabilizing the borehole and reducing the friction during the pullback operation.

In the following sections commonly used drilling/steering tools, navigation systems and drilling fluids are discussed in detail. Also, design considerations for a typical horizontal-crossing project are outlined.

DRILLING & STEERING

Drilling curved and horizontal boreholes requires specialized drilling equipment. This equipment is contained in a bottom hole assembly (BHA) that consists of a drilling tool, a bent sub-assembly, and a steering/tracking tool. This section is devoted to drilling and steering tools.

Perhaps the two most common types of down-hole drilling/steering tools used in the HDD industry are compaction tools and down-hole mud motors. Compaction heads consist of a wedge shaped drilling bit, which is used for cutting/displacing the soil as well as for steering.

To bore a straight hole the drill string is rotated and pushed simultaneously. When a correction in direction is required, rotation stops and the drilling head is preferentially oriented in the borehole. Then the entire drill string is pushed forward by the drill rig. As the slant on the face of the wedge is pushed against the soil, the entire assembly is deflected in the desired direction. After the steering correction is completed, rotation is resumed until another correction is needed.

Compaction type drilling tools are most commonly used in mini and midi size drilling rigs to drill through soft to medium consolidated soils as well as loose and dense sands. In the presence of gravel or hard clay, these drilling tools tend to wear out rapidly. They are not suitable for drilling in rock formations.

When using compaction heads, difficulties in steering may be encountered while attempting to drill in very soft soils as the resistance to the deflector plate may not be large enough to counteract the tendency of the drill string to dive vertically under its own weight. The solution to this problem is to use a larger deflector plate. Steering can also be improved by increasing the flexibility at the head of the drill string by adding a length (approximately 6-9m) of smaller diameter more flexible drill rod behind the drill bit. The smaller diameter rod is coupled with the larger diameter drill rod that provides the tensile strength required for pull back.

Mud motors are used in ground conditions ranging from hard soil to rock (up to 40,000 psi unconfined compressive strength). This system uses a positive displacement motor, from the flow output of the mud pump, it generates torque and rotation at the drill bit. The direction control is brought about by a small bend in the drill string just behind the cutting head. For example, if a right turn is desired the bend is orientated to the right, enabling the drill path to advance in a smooth radius bend to the right. As with the compaction heads, once the correction is made the complete drill string is rotated to continue boring straight in the new direction. This method is rather costly in comparison to a compaction head, and is less common in the utility installation industry.

The advantage is that the mud motor does the cutting of the formation. This reduces the drill string rotation requirements, thus making it possible to drill long boreholes (up to 2000m) to substantial depths. On the negative side, mud motors are substantially more expensive than compaction heads and require hundreds of liters of drilling fluids per minute.

TRACKING

Tracking refers to the ability to locate the position, depth and orientation of the drilling head during the drilling process. Accurate tracking capability is essential for the completion of a successful bore. Tracking tools are generally one of three types: 1) electronic beacon systems (“walkover”); 2) magnetometer-accelerometer systems; or 3) inertial navigation systems.

A “walkover system” consists of three components, namely a transmitter, a receiver and a remote monitor. Transmitters (or sondes) are available to maximum depths of 10, 15 or 30 meters. A battery powered transmitter (aside from the 30m sonde which requires hard wiring) is located in the bore hole assembly (BHA) near the front of the drill string. It emits a continuous magnetic signal.

The receiver is a portable, hand held unit, which measures the strength of the signal sent by the transmitter. This information allows users to accurately determine the location of the drill head in terms of position, depth and orientation. Additionally, information regarding battery life and transmitter temperature is provided.

The remote monitor is a display unit installed at the drilling rig in front of the operator. It receives and displays the information provided by the receiver. The operator uses this information to navigate the drilling head below the surface. The data received by the remote is recorded to provide an ‘as-built’ profile of the bore path for future reference. The accuracy of this tool as stated by the manufacture is ±5% of the tool’s true depth.

When access to a location directly above the borehole alignment is not possible, or when borehole depth exceed 30 meters, a more sophisticated navigation systems should be used. Two systems commonly employed are the magnetometer-accelerometer system and the inertial navigation system. The magnetometer-accelerometer system uses three magnetometers to measure the position (azimuth) of the tool in the earth’s magnetic field and three accelerometers to measure the position (inclination) of the tool in the earth’s gravitational field.

The steering tool transmits information via a wire line to a computer at the surface where the azimuth, inclination and orientation of the tool face are calculated. The accuracy of this system, as stated by the Manufacture, is ±2° in azimuth and ±2% in true depth. As far as operating depth and distance from the drilling rig, this steering tool does not impose any limitation on the rig’s operating range.

Disadvantages of this system include susceptibility to magnetic inferences from buried metal objects and power lines. Thus, some magnetic-accelerometer systems use a secondary survey system (named "Tru-Track") to account for local magnetic influences on the down-hole probe.

The secondary survey system induces a known magnetic field at the ground surface through a copper wire surface grid. A computer program connected to both the surface magnetic field and the steering tool compares the magnetic field measured by the steering tool and the theoretical magnetic field induced by the system, and compensates for local magnetic interference. Such secondary survey systems can be effectively used to a depth of 30m.

The inertial navigation system uses a system of three gyroscopes and three accelerometers to measure the azimuth and the inclination of the steering tool, respectively. The gyroscopes are aligned to True North at the ground surface before the survey is made. Any deviation from True North during the survey is detected by the gyroscopes and relayed to the surface where the azimuth, inclination, and drilling tool orientation are calculated by a computer.

Both systems are expensive ($80,000) and **require expert operators**, thus most drilling contractors hire the services of companies such as Sharewell Inc. and Inrock Guidance Systems Inc., which specialize in operating these systems.

DRILLING FLUIDS

Drilling fluid is composed of a carrier fluid and solids (clay or polymer). The carrier fluid carries the solids down the well bore where they block off the pore spaces on the borehole wall. The blockage is referred to as a filter or mud cake. The ideal mud cake will form quickly during construction of the well bore and prevent intrusion of drilling fluid into the formation. At times additives such as detergents are added to the drilling fluids to counteract some of the formation characteristics such as swelling and stickiness.

The principal functions of drilling fluids used in HDD are:

1. To transport excavated drill cuttings to the surface by suspending and carrying them in the fluid stream flowing in the annulus between the well bore and the drill rod.

2. To clean build-up on drill bits or reamer cutters by directing high-velocity fluid streams at the cutters. This also cools the bits/cutters and electronic equipment.

3. To reduce the friction between the drill string/well product and the well bore wall aided by the lubricating properties of the drilling fluid.

4. Stabilizing the well bore, especially in unconsolidated soils by building a low permeability filter or mud cake lining, and exerting a positive hydrostatic pressure against the well bore wall. Thus preventing collapse as well as formation fluids from flowing into the well bore or drilling fluids from exiting the well bore into the formation (lost of circulation).

5. To provide hydraulic power to downhole mud motors if used.

DESIGN CONSIDERATIONS

Typical products installed using an HDD rig include Steel, High Density Polyethylene (HDPE) or Polyvinyl Chloride (PVC) conduits, as well as direct buried cables. During installation the pipeline product experiences a combination of tensile, bending and compressive stresses. The magnitude of these stresses is a function of the approach angle, bending radius, product diameter, length of the borehole and the soil properties at the site.

By properly selecting the radius of curvature and type of product, the design engineer can ensure that these stresses do not exceed the product capacity during the installation. Ideally, the design should call for a minimum number of joints. If joints are necessary, flush joints (butt fusion/welding) are preferable to glued or treaded joints, which tend to increase the drag on the product in the borehole.

Other considerations include minimum cover, minimum separation from existing utilities, tolerances for deviation in the vertical and horizontal profiles, and maximum true depth (if depth exceeds the range of a walkover tracking system the project cost may increase significantly).

GUIDELINES & SPECIFICATIONS
FOR
INSTALLATION BY HORIZONTAL DIRECTIONAL DRILLING TECHNOLOGY

Horizontal Directional Drilling, another acceptable method of placing carrier pipe or casing pipe, involves the initial drilling of a pilot bore approximately 50mm (2 inches) to 125mm (5 inches) in diameter along a predetermined bore profile utilizing a combination of both mechanical and jetting techniques. Drilling is accomplished by means of surface launched drilling equipment (typical) or pit launched drilling equipment.

Once the pilot hole is completed the product pipe is attached to the drill rod with a reamer and swivel. The reamer enlarges the pilot hole typically 1.2 to 1.5 times the outside diameter of the product pipe in a single pass (ie. concurrent with pipe pull) or in multiple passes (typically when pipe installed diameters are greater than 300mm to 350mm (12 to 14 inches) in diameter).

In addition to transporting the soil cuttings, the drilling fluids aid in maintaining the stability of the drilled borehole preventing the hole from collapsing.

Drilling fluids are pumped through the drill pipe and reamer mixing with and suspending the soil cuttings for transport to the surface, which provides lubrication to reduce pipe friction, and to maintain hole stability. During pullback the swivel prevents rotational forces from the drill pipe being translated to the product pipe.

Steering is accomplished by use of an angled face on the drill head or by a slight bend in the drill pipe just behind the cutting head. To effect changes in direction the drill is rotated to the desired clock angle and the rod pushed forward (ie. if the drill face or bend is orientated to the right the drill path will then proceed to the right.).

Locating and tracking is accomplished by measuring an electromagnetic signal generated by a transmitter located in the drill rod just behind the drill head. The signal strength, and other parameters such as pitch (inclination), roll (clock), and azimuth (direction) which are “attached” to the transmitted signal, and are received above ground by a hand held locator (walkover receiver system). Based on the signal strength, the position (x, y) and depth can be determined for the drill head and compared to a pre-determined borehole alignment.

Where access is not available above the drill head, a wireline system may be utilized where the required drill information is transmitted, via wire, back through the drill string to the drill rig where a computer plots the borehole progress. Where strategic placements are required or magnetic interference may be present, a wire grid is utilized to induce a known magnetic field. Based on the induced signal strength and the known location of the wire grid, the position of the drill head can be determined. Wire line systems utilize nonmagnetic drill collars and drill pipe.

The drilling unit should be equipped with an electrical strike safety package. The package should contain warning sound alarm, grounding mats, and protective safety gear.

PERMIT APPLICATION SUBMITTAL

The permit application package shall contain the following information in support of the permit application.

1. Location of entry and exit point.
2. Equipment and pipe layout areas.
3. Proposed drill path alignment (both plan & profile view).
4. Location, elevations and proposed clearances of all utility crossings and structures.
5. Proposed Depth of cover.
6. **Soil analysis.
7. Product material (HDPE/steel), length, diameter-wall thickness, reamer diameter.
8. Detailed pipe calculations, confirming ability of product pipe to withstand installation loads and long term operational loads including H20.
9. Proposed composition of drilling fluid (based on soil analysis) viscosity and density.
10. Drilling fluid pumping capacity, pressures, and flowrates proposed.
11. State right-of-way lines, property, and other utility right-of-way or easement lines.
12. Elevations.
13. Type of tracking method/system.
14. Survey Grid establishment for monitoring ground surface movement (settlement or heave) due to the drilling operation.

Note: ** *May be waived by the District Permit Engineer on HDD jobs of less than 200mm (6") in diameter and on a transverse crossing less than 150' in length.*

ALL ADDITIONAL PERMIT CONDITIONS SHALL BE SET FORTH IN THE SPECIAL PROVISIONS OF THE PERMIT.

The following, outlines recommended depths for various pipe diameters:

RECOMMENDED MINIMUM DEPTH OF COVER	
DIAMETER	**DEPTH OF COVER**
50mm (2 inches) to 150mm (6 inches)	1.2 meters (4 feet)
200mm (8 inches) to 350mm (14 inches)	1.8 meters (6 feet)
375mm (15 inches) to 600mm (24 inches)	3.0 meters (10 feet)
625mm (25 inches) to 1200mm (48 inches)	4.5 meters (15 feet)

The permittee/contractor shall, prior to and upon completion of the directional drill, establish a Survey Grid Line and provide monitoring.

Upon completion of the work, the permittee shall provide an accurate as-built drawing of the installed pipe.

SOIL INVESTIGATIONS

A soil investigation should be undertaken, suitable for the proposed complexity of the installation to confirm ground conditions.

Definition: Soil Analysis

Common sense must be utilized when requiring the extensiveness of the soil analysis. A soil analysis is required in order to obtain information on the ground conditions that the contractor will encounter during the HDD operation.

If, the contractor can go to the project site and do an excavation with a backhoe to one foot below the proposed depth of the bore, that is a soil investigation. In all cases when an excavation is made in creating of an entrance and exit pit for a HDD project, that is an example of a soil investigation. The HDD process is in itself a continual and extensive soil analysis as the pilot bore is made and it encounters the varying soils and formations the drilling slurry will change colors, therefore providing the contractor with continual additional information.

The purpose and intent of the soil analysis is to assist the contractor in developing the proper drilling fluid mixture, and to ensure Caltrans that the contractor is aware of the conditions that do exist in the area of the proposed project. This prepares the contractor in the event they should encounter a zone of pre-tectonics, and that they would need additives or preventive measures in dealing with inadvertent returns (frac-outs).

The discretion on the extensiveness of the soil analysis is left to each individual District Permit Engineer (DPE) respectfully, for their respective areas. The inspectors play a large role in assisting the DPE in making decisions on the extensiveness. Each individual inspector has a general knowledge of the soil conditions in their area of responsibility.

In many circumstances the soil information has already been prepared, either by Caltrans or by City and County Entities. This information if existing should be provided to the requesting permittee, if there is a structure within 1/2 mile of the proposed project, then Caltrans has already done an extensive soil analysis and the information is stored in our Maps & Records Branch. As-Builts, on our freeways and highways provide stationing and detailed information regarding soil information, cut and fill areas.

Determination of Soil Investigations

The District Permit Engineer (DPE) should determine the extensiveness of the Soil Investigation to be performed based on the complexity of the HDD operation, the DPE may recommend according to the guidelines listed below, a combination of, or modify the guideline to fit the respective area:

Projects less than 500' in length, where the product or casing is 8" or less in diameter:

A field soil sampling investigation to a depth of one foot below the proposed drilling.

a) subsurface strata, fill, debris and material

Projects less than 800' in length, where the product or casing is 14" or less in diameter:

A field soil sampling investigation to a depth of one foot below the proposed drilling.

a) subsurface strata, fill, debris and material
b) particle size distribution (particularly percent gravel and cobble)

Projects where the product or casing is 16" or greater in diameter:

A geotechnical evaluation by a qualified soil engineer to determine the following.

a) subsurface strata, fill, debris and material,
b) particle size distribution (particularly percent gravel and cobble),
c) cohesion index, internal angle of friction, and soil classification,
d) plastic and liquid limits (clays), expansion index (clays), soil density
e) water table levels, and soil permeability,

Projects where the product or casing 24" or greater in diameter:

A geotechnical evaluation by a qualified soil engineer to determine the following.

a) subsurface strata, fill, debris and material
b) particle size distribution (particularly percent gravel and cobble)
c) cohesion index, internal angle of friction, and soil classification
d) plastic and liquid limits (clays), expansion index (clays), soil density, and penetration tests,
e) rock strength, rock joint fracture and orientation, water table levels, and soil permeability,
f) areas of suspected and known contamination should also be noted and characterized.

Boreholes or test pits should be undertaken at approximately 75 to 125 meter (250 to 410 feet) intervals where a proposed installations greater than 1000' feet in length and parallel an existing road. For road crossings a borehole or test pit shall be undertaken on either side with one or more additional boreholes or test pits in the median where conditions permit. Additional boreholes or test pits should be considered if substantial variation in soil conditions are encountered.

Should the soil investigation determine the presence of gravel, cobble, and/or boulders, care should be exercised in the selection of drilling equipment and drilling fluids. In such ground conditions the use of casing pipes or washover pipes may be required or specialized drilling fluids utilized. Fluid jetting methods used as a means of cutting **should only be considered** where soils have a high cohesion such as stiff clays.

Directional drilled gravity sewers shall only be considered where suitable soil conditions are present. Suitable soil conditions include homogenous soils consisting of clays, silts, silty sands, and sands that would allow for good control of the drill head during the pilot hole drilling.

PRE-CONSTRUCTION & SITE EVALUATION

The following steps should be undertaken by the permittee/contractor in order to ensure safe and efficient construction with minimum interruption of normal, everyday activities at the site.

1. Notify owners of subsurface utilities along and on either side of the proposed drill path of the impending work through USA alert (the one-call program). All utilities along and

on either side of the proposed drill path are to be located.
2. Obtain all necessary permits or authorizations to carry construction activities near or across all such buried obstructions.
3. All utility crossings should be exposed using a hydro-excavation, hand excavation or other approved method (potholing) to confirm depth.
4. Construction schedule should be arranged so as to minimize disruption (e.g. drilling under railroad beds, major highways, and/or river crossings).
5. The proposed drill path should be determined and documented, including its horizontal and vertical alignments and the location of buried utilities and substructures along the path.

The size of excavations for entrance and exit pits should be of sufficient size to avoid a sudden radius change of the pipe, and consequent excessive deformation at these locations. Sizing the pits is a function of the pipe depth, diameter and material. All pits, over 5' in depth must be shored as required by OSHA regulations.

Walk the area prior to the commencement of the project and visually inspect potential sites. The following should be addressed:

1. When on State R/W establish whether or not there is sufficient room at the site for: entrance and exit pits; HDD equipment and its safe unimpeded operation; support vehicles; fusion machines; stringing out the pipe to be pulled back in a single continuous operation.
2. Establishing suitability of soil conditions for HDD operations (The HDD method is ideally suited for soft sub-soils such as clays and compacted sands. Subgrade soils consisting of large grain materials like gravel, cobble, and boulders make HDD difficult to use and may contribute to pipe damage).
3. Check the site for evidence of substructures such as manhole covers, valve box covers, meter boxes, electrical transformers, conduits or drop lines from utility poles, and pavement patches. HDD may be a suitable method in areas where the substructure density is relatively high.

INSTALLATION REQUIREMENTS

The permittee shall ensure that appropriate equipment is provided to facilitate the installation, in particular the drill rig shall have sufficient pulling capacity to meet the required installation loads determined by the detailed pipe calculations. The drill rig should have the ability to provide pull loads, push loads, torque and the permittee shall ensure that they are monitored during the drilling operation. The permittee shall ensure the drill rod can meet the bend radii required for the proposed installation (a general rule of thumb is 100 times in feet, the diameter of the drill pipes).

During construction continuous monitoring and plotting of pilot drill progress shall be undertaken to ensure compliance with the proposed installation alignment and allow for appropriate course corrections to be undertaken that would minimize “dog legs” should the bore start to deviate from the intended bore path.

Monitoring shall be accomplished by manual plotting based on location and depth readings provided by the locating/tracking system or by computer generated bore logs which map the bore path based on information provided by the locating/tracking system. Readings or plot points shall be undertaken on every drill rod.

For gravity sewer installations or installations where tight control of alignment and grade is required readings shall be undertaken every 1.0 to 1.5 meters (3 to 5 feet). At the completion of the bore an as-built drawing shall be provided. Prior to commencement of a directional drilling operation, proper calibration of the sonde equipment shall be undertaken.

Monitoring of the drilling fluids such as the pumping rate, pressures, viscosity, and density during the pilot bore, back reaming, and/or pipe installation stages, shall be undertaken to ensure adequate removal of soil cuttings and the stability of the borehole is maintained. Excess drilling fluids shall be contained at entry and exit points until recycled or removed from the site. Entry and exit pits should be of sufficient size to contain the expected return of drilling fluids and soil cuttings.

The permittee shall ensure that all drilling fluids are disposed of in a manner acceptable to the appropriate local, state, or federal regulatory agencies. When drilling in contaminated ground the drilling fluid shall be tested for contamination and disposed of appropriately. Restoration of damage to any highway or non-highway facility caused by escaping ("fracout") drilling fluid, or the directional drilling operation, shall be the responsibility of the permittee.

To minimize heaving during pullback, the pull back rate shall be determined which maximizes the removal of soil cuttings and minimizes compaction of the ground surrounding the borehole. The pullback rate shall also minimize overcutting of the borehole during the back reaming operation to ensure excessive voids are not created resulting in post installation settlement.

The permittee shall, prior to and upon completion of the directional drill, establish a Survey Grid Line and provide monitoring as outlined in their submitted detailed monitoring plan. Subsurface monitoring points shall be utilized to provide early indications of settlement as large voids may not materialize during drilling due to pavement bridging.

Should pavement heaving or settlement occur, sawcutting and replacement of the asphalt would be the responsibility of the permittee.

To prevent future settlement should the drilling operation be unsuccessful the permittee shall ensure the backfill of any void(s) with grout or backfilled by other means.

THE ABOVE REQUIREMENTS ARE DESCRIBED FURTHER AS FOLLOWS:

1.0 CONSIDERATIONS

1. ***Different ground conditions:*** The availability of adequate geo-technical information is invaluable in underground construction; it acts to reduce the risk born by the permittee/contractor. However, even in the presence of good geo-technical data, unexpected ground conditions may be encountered.

2. ***Turbidity of Water and Inadvertent Returns:*** Prior to construction beginning, while difficult to predict, events may lead to work stoppage. The permittee/contractor should offer a mechanism to mutually address and mitigate these problems if and when they should arise. For example, contingency plans for containment and disposal of inadvertent returns or frac outs.

2.0 PERMITTEE/CONTRACTOR RESPONSIBILITIES

The permittee/contractor should provide the following items: construction plan; site layout plan; project schedule; communication plan; safety procedures; emergency procedures; company experience record; contingencies plan and drilling fluid management plan.

2.1 CONSTRUCTION PLAN REQUIREMENTS

The permittee shall identify in the construction plan:

1) location of entry and exit pits.
2) working areas and their approximate size.
3) proposed pipe fabrication and layout areas.
4) state right-of-way lines, property lines.
5) other utility right-of way and easement lines.
6) pipe material and wall thickness.
7) location of test pits or boreholes undertaken during the soil investigation.
8) identify the proposed drilling alignment (both plan & profile view) from entry to exit.
9) identify all grades and curvature radii.
10) all utilities (both horizontal and vertical).
11) structures with their clearances from the proposed drill alignment.
12) confirm the minimum clearance requirements of affected utilities and structures.
13) required minimum clearances from existing utilities and structures.
14) diameter of pilot hole, number and size of pre-reams/backreams.
15) Access requirements to site (if required).
16) crew experience.
17) Type of tracking equipment.

2.2 LOCATING AND TRACKING

EFFECTIVE JANUARY 1, 2000, LOCATING AND TRACKING OF THE REAMER DURING THE BACK-REAMING PROCESS IS REQUIRED.

The permittee shall describe the method of locating and tracking the drillhead during the pilot bore. Systems include walkover, wireline, or wireline with wire surface grid. The locating and tracking system shall be capable of ensuring the proposed installation can be installed as intended.

Typical walkover sounds have an effective range of 10 to 15 meters, depending on the Electro-magnetic properties of the soil and the extent of local magnetic interference. Depending on the profile of the borehole, the driller may lose contact with the sound over certain sections of the alignment. If the “blind” section is expected to be too long or in the vicinity of a buried object, the project engineer may specify the use of a wire-line system or a magnetic navigation tool.

The locating and tracking system shall provide the following information:

- Clock and pitch information
- Depth
- Beacon Temperature

- Battery Status
- Position (x,y)
- Azimuth – where direct overhead readings (walkover) are not possible.

Illustration **2.2A** below shows a universal housing that will work with any drill-string on all HDD rigs. The placement of the sonde should be before the backreamer.

This housing can be utilized in the initial pilot bore, after exiting, the cutting head can be removed and the reamer installed.

This housing chamber can utilize any of the sonde batteries manufactured, regardless of manufacturer.

There is also a 2.5" mini-sonde combination available for smaller rigs. This particular model can be seen at the following web site: **www.geologicalboring.com/**

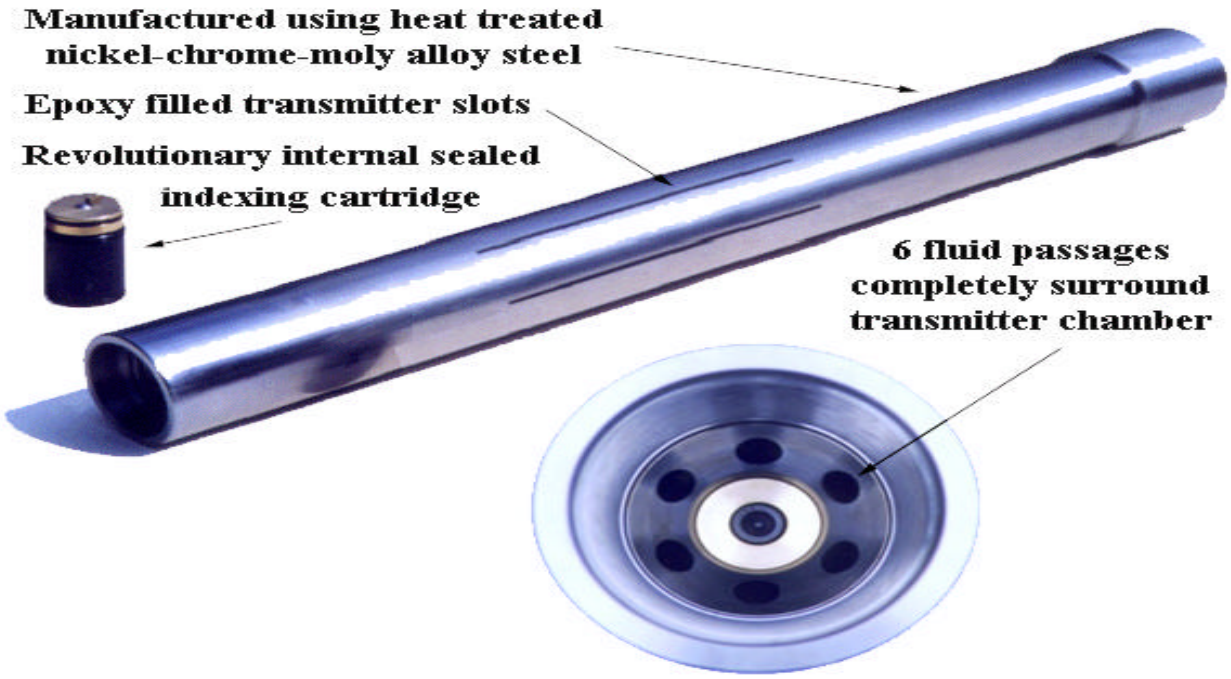


ILLUSTRATION 2.2A

2.3 Drilling Fluids Management Plan

The following information should be provided as part of the drilling fluid management plan:

- Proposed viscosities for soil transportation to the entry and exit pits.
- Estimated pumping capacity and pressures.
- Identify source of fresh water for mixing the drilling mud (Necessary approvals and permits are required for sources such as streams, rivers, ponds, or fire hydrants).
- Method of slurry containment.

- Method of recycling drilling fluid and spoils (if applicable).
- Method of transporting drilling fluids and spoils off site.

Drilling fluid pressures should not exceed that which can be supported by the overburden (soil) pressure.

Drilling fluids serve many functions, as follows:

- Removes cuttings from the bottom of the hole and transports them to the surface.
- Holds cuttings and weight material in suspension when circulation is interrupted.
- Releases sands and cuttings at the surface.
- Stabilizes the hole with an impermeable cake.
- Cools and lubricates the drill bit and drill string
- Controls subsurface pressures.
- Transmits hydraulic horsepower.
- Cools the locating transmitter sonde preventing burnout.

Section 7 provides a more detailed discussion of drilling fluid handling and disposal practices.

2.4 Previous Experience

1. The permittee's contractor should provide a list of projects completed by his company, location, project environment (e.g., urban work, river crossing), product diameter and length of installation.
2. The permittee's contractor should provide a list of key personnel.

2.5 Safety

The drilling unit should be equipped with an electrical strike safety package. The package should include warning sound alarm, grounding mats (if required), and protective gear.

The permittee/contractor should have a copy of the company safety manual including:

2.1 Operating procedures that comply with applicable regulations, including shoring of pits and excavations when required.

2.2 Emergency procedures for inadvertently boring into a natural gas line, live power cable, water main, sewer lines, or a fiber-optic cable, which comply with applicable regulations.

2.3 Emergency evacuation plan in case of an injury.

2.6 Contingency Plans

The Contingency plan should address the following:

a) Inadvertent return, spill (e.g., drilling fluids, and hydraulic fluids), including measures to contain and clean the affected area.
b) clean up of surface seepage of drilling fluids and spoils (i.e., “Frac-out”).

2.7 Communication Plan

The communication plan should address the following:

1. The phone numbers for communication with owner or his representative on the site.
2. Identification of key person(s) which will be responsible for ensuring that the communications plan is followed.
3. Issues to be communicated including safety, progress, and unexpected technical difficulties.

2.8 Traffic Control

1. When required, the permittee/contractor is responsible for supplying and placing warning signs, barricades, safety lights, and flags or flagmen, as required for the protection of pedestrians and vehicle traffic.
2. Obstruction of the roadway, on major road, should be limited to off-peak hours.

3.0 IN ADDITION TO THE PERMIT PACKAGE (IF REQUIRED)

Information that may be required, include other permits, bonding and certification as listed in the following sections.

3.1 Additional Permits that may be required:

1. for obtaining water (ie: hydrants, streams, etc.)
2. for storage, piling and disposal of material.
3. for water/bentonite disposal.
4. Any other permits required carrying out the work.

3.2 Bonding and Certification Requirements

1. Payment bond (if required).
2. Performance bond (if required).
3. Certificate of insurance
4. WCB certificate letter
5. ACSA certificate of recognition

4.0 Drilling Operations

The following paragraphs provide general remarks and rules of thumb related to the directional boring method, as well as specific details regarding various stages of the installation process.

4.1 General

1. Only operators who have State Form TR-0770, "Proof of Training" are permitted to operate the drilling equipment in State R/W.
2. Drilling mud pressure in the borehole should not exceed that which can be supported by the overburden to prevent heaving or a hydraulic fracturing of the soil (i.e. “Frac-out”). Allowing for a sufficient cover depth does this. Typical bore depth of 0.75m to 1.0m

gives pipes with an Outside Diameter (O.D.) of 50-200mm a minimum cover of 0.65m. While circumstances may dictate greater depths, shallower depths are not recommended.

3. The drill path alignment should be as straight as possible to minimize the fractional resistance during pullback and maximize the length of the pipe that can be installed during a single pull.
4. It is preferable that straight tangent sections be drilled before the introduction of a long radius curve. Under all circumstances, a minimum of one complete length of drill rod should be utilized before starting to level out the borehole path.
5. The radius of curvature is determined by the bending characteristics of the product line, and it is increasing with diameter.
6. Entrance angle of the drill string should be between 8 and 20 degrees, with 12 degrees being considered optimal. Shallower angles may reduce the penetrating capabilities of the drilling rig, while steeper angles may result in steering difficulties, particularly in soft soils. A recommended value for the exit angle of the drill string is within the range of 5 to 10 degrees.
7. Whenever possible, HDD installation should be planned so that back reaming and pulling for a leg can be completed on the same day. If necessary, it is permissible to drill the pilot hole and pre-ream one-day, and complete both the final ream and the pull back on the next day.
8. If a drill hole beneath a road must be abandoned, the hole should be backfilled with grout or bentonite to prevent future subsidence.
9. Pipe installation should be performed in a manner that minimizes the over-stressing and straining of the pipe. This is of particular important in the case of a polyethylene pipe.

4.2 Equipment Setup and Site layout

1. Sufficient space is required on the rig side to safely set up and operate the equipment. The workspace required depends on the type of rig used. A small rig may require as little as 3x3m working space, while a large river crossing unit requires a minimum of 30x50m working area. A working space of similar dimensions to that on the rig side should be allocated on the pipe side, in case there is a need to move the rig and attempt drilling from this end of the crossing.
2. If at all possible, the crossing should be planned to ensure that drilling proceed downhill, allowing the drilling mud to remain in the hole, minimizing inadvertent return.
3. Sufficient space should be allocated to fabricate the product pipeline into one string, thus enabling the pull back to be conducted in a single continuous operation. Tie-ins of successive strings during pullback may considerably increase the risk of an unsuccessful installation.

4.3 Drilling and Back-Reaming

1. Drilling mud should be used during drilling and back reaming operations. Using exclusively water may cause collapse of the borehole in unconsolidated soils, while in clays, the use of water may cause swelling and subsequent jamming of the product.
2. Heaving may occur when attempting to back ream too large of a hole. This can be avoided by using several pre-reams to gradually enlarge the hole to the desired diameter.
3. A swivel should be attached to the reamer, or drill rod, to prevent rotational torque being transferred to the pipe during pullback.
4. In order to prevent over stressing of the product during pullback, a weak link, or breakaway-pulling head, may be used between the swirl and the leading end of the pipe.

More details regarding breakaway pulling heads can be found in Section 5.

5. The pilot hole must be back-reamed to accommodate and permit free sliding of the product inside the borehole. A rule of thumb is to have a borehole 1.5 times the product outer diameter. This role of thumb should be observed particularly the larger diameter installations (≥ 250mm O.D.). Some recommended values for final pre-ream diameter as a function of the product O.D. are given in Table II. These values should be increased by 25% if excessive swelling of the soil is expected to occur or the presence of boulders/cobbles is suspected.

Table II: Recommended Back-Ream Hole Diameter (Popelar et al., 1997)

Nominal Pipe Diameter (millimeters)	Back-Ream Hole Diameter (millimeters)
50	75 to 100
75	100 to 150
100	150 to 200
150	250 to 300
200	300 to 350
250	350 to 400
≥300	At least 1.5 times product OD

6. The conduit must be sealed at either end with a cap or a plug to prevent water, drilling fluids and other foreign materials from entering the pipe as it is being pulled back.
7. Pipe rollers, skates or other protective devices should be used to prevent damage to the pipe from the edges of the pit during pullback, eliminate ground drag or reduce pulling force and subsequently reduce the stress on the product.
8. The drilling mud in the annular region should not be removed after installation, but permitted to solidify and provide support for the pipe and neighboring soil.

4.4 Tie-Ins and Connections

1. Trenching may be used to join sections of conduits installed by the directional boring method.
2. An additional pipe length, sufficient for joining to the next segment, should be pulled into the entrance pit. This length of the pipe should not be damaged or interfere with the subsequent drilling of the next leg. The contractor should leave a minimum of 1m of conduit above the ground on both sides of the borehole.

4.5 Alignment & Minimum Separation

The product should be installed to the alignment and elevations shown on the drawings within the pre-specified tolerances (tolerance values are application dependent, for example, in a major river crossing, a tolerance of ±4 m from the exit location along the drill path centerline may be an acceptable value). This tolerance is not acceptable when installing a product line between manholes. Similarly, grade requirements for a water forcemain are significantly different from those on a gravity sewer project.

When a product line is installed in a crowded right-of-way, the issue of safe minimum separation

distance arises. Many utility companies have established regulations for minimum separation distances between various utilities. These distances needed to be adjusted to account for possible minor deviation when a line product is installed using HDD technology. As a rule of thumb, if the separation distance between the proposed alignment and the existing line is 5 meters or more, normal installation procedures can be followed. If the separation is 1.5 meters or less, special measures, such as observation boreholes are required. The range between 1.5 and 5 meters is a "gray" area, typically subject to engineering judgement (a natural gas transmission line is likely to be treated more cautiously than a storm water drainage line).

5.0 BREAK-AWAY PULLING HEAD

Recent reports from several natural gas utility companies reveal concerns regarding failure experienced on HDPE pipes installed by horizontal directional drilling (Troch and Doyle, 1998). These failures were attributed to deformation of the pipe due to the use of excessive pulling force during installation. A mitigation measure adopted by some gas companies involves the use of breakaway swivels to limit the amount of force used when pulling HDPE products. Some details regarding these devices and their applications are given below.

1. The weak link used can be either a small diameter pipe (but same SDR) or specially manufactured breakaway link. The latter consists of a breaking pin with a defined tensile strength incorporated in a swivel. When the strength of the pin is exceeded it will break, causing the swivel to separate. A summary of pulling head specifications is given in Table III (all products are SDR 11). "Note that the values provided in Table III could be considered conservative."

Table III: Pulling Head Specifications (Troch and Doyle, 1998)

Pipe Diameter (in.)	Diameter of Break-Away Swivel (in.)	Maximum Allowable Pulling Force (lb.)
1 ¼	7/8	850
2	1 ¼	1,500
4	1 3/8	5,500
6	2 ½	12,000
8	3	18,500

2. The use of breakaway swivels is particularly warranted when installing small diameter HDPE pipes (up to 4" O.D.). Application of such devices in the installation of larger diameter products is not currently a common practice.
3. If the drilling equipment rated pulling capacity is less than the safe load the use of a weak link may not be required.
4. Exceeding the product elastic limit can be avoided simply by following good drilling practices, namely: regulating pulling force; regulating pulling speed; proper ream sizing; and using appropriate amounts of drilling slurry fluid.

6.0 PROTECTIVE COATINGS

In an HDD installation, the product may be exposed to extra abrasion during pullback. When installing a steel pipe, a form of coating which provides a corrosion barrier as well as an abrasion barrier is recommended during the operation, the coating should be well bonded and have a hard smooth surface to resist soil stresses and reduce friction, respectively. A recommended type of

coating for steel pipes is mill applied Fusion Bonded Epoxy.

7.0 DRILLING FLUID - COLLECTION AND DISPOSAL PRACTICES

The collection and handling of drilling fluids and inadvertent returns has been one of the most debated topics, the need to keep drilling fluids out of streams, streets and municipal sewer lines.

1. Drilling mud and additives to be used on a particular job should be identified in the permit package, and their Material Safety Data Sheets (MSDS) should be provided to the Permit Office.
2. Excess drilling mud slurry shall be contained in a lined pit or containment pound at exit and entry points, until recycled or removed from the site. Entrance and exit pits should be of sufficient size to contain the expected return of drilling mud and spoils.
3. Methods to be used in the collections, transportation and disposal of drilling fluids, spoils, and excess drilling fluids should be in compliance with local ordinances, regulations and environmentally sound practices in an approved disposal site.
4. When working in an area of contaminated ground, the slurry should be tested for contamination and disposed of in a manner, which meets government requirements.
5. Precautions should be taken to keep drilling fluids out of the streets, manholes, sanitary and storm sewers, and other drainage systems, including streams and rivers.
6. Recycling drilling fluids is an acceptable alternative to disposal.
7. The contractor shall make all diligent efforts to minimize the amount of drilling fluids and cuttings spilled during the drilling operation, and shall provide complete clean-up of all drilling mud overflows or spills.

8.0 SITE RESTORATION AND POST CONSTRUCTION EVALUATION

1. All surfaces affected by the work shall be restored to their pre-construction conditions. Performance criteria for restoration work will be similar to those employed in traditional open excavation work.
2. If required, the permittee/contractor shall provide a set of as-built drawings including both alignment and profile. Drawings should be constructed from actual field readings. Raw data should be available for submission at any time upon request. As part of the "As-Built" document the contractor shall specify the tracking equipment used, including method or confirmatory procedure used to ensure the data was captured.

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Troch S.J. and Doyle C. E. (1998). "Break-a-way Pulling Heads fir Installing Plastic Pipe by Horizontal Directional Drilling." *Underground Trenchless Construction Conference and Trade Show*, Houston, January.

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APPENDIX A - BASIC TERMINOLOGY

Approach Angle: The angle between the drill stem and the ground surface at the surface entry point. Depending on the type of rig being used, this angle may vary from 7° to 90° to the horizontal. An angle of less than 30° is most common.

Back-Reamer: A tool attached to end of the drill string and pulled through the bore to enlarge the hole and mix the cuttings with the drilling fluid.

Bentonite: Absorbent aluminum silicate clay formed from volcanic ash. When thoroughly mixed with water, bentonite breaks down into small particles called platelets. The platelets plaster or shingle off the wall of the bore and form a filter cake that cuts off the flow of the water into the surrounding formation.

Compaction Head: A drilling head that is used in soft soils and compacts the pilot bore hole.

Combination Head: A drilling head that has both the action of compaction and cutting into one.

Cutting Head: A drilling head that is used for tougher soils and roots.

Cuttings: Spoils particles, also known as drilling spoils, created during the boring process. Use of proper drilling fluid will help to suspend the cuttings that reduce the risk of getting stuck during drilling or back reaming.

Duckbill: The drilling bit that is attached to the front of the boring head. It mounts on the head at an angle and is also bent. This angle is what provides the steering capability while pushing the drilling string.

Exit pit: The area where the drill pipe exits the ground and the service lines are pulled back.

Frac-out: Under certain conditions, the drilling fluid can build a large pressure in the borehole. If the pressure become great enough, the ground will fracture, allowing the drilling fluids to escape the bore.

Mud: Drilling fluids.

Polymer: Natural synthetic compounds of high molecular weight. Polymers, when used in conjunction with bentonite in the drilling fluid, enhance viscosity and gel strength, lowers filtration rate, and increases lubricity. The use of polymer is recommended when boring in clay or shale.

Rack: The actual boring machine that includes the drive head, controls, vise, etc.

Radius of Curvature: The radius of curvature, which typically ranges between 150 and 800 feet, defines the curved portion of the borehole. The greater the borehole radius of curvature, the greater the total borehole length. The benefit of a higher radius of curvature (reduced stress on drilling equipment and pipeline product) must be balanced against the additional cost of drilling a longer borehole.

Roll: The rotational position of the drill head as it relates to a clock face.

Sonde: An electronic device that fits inside the drill head and transmits a signal used for locating

purposes. Also referred to as a transmitter or probe.

Step-off Distance: The horizontal distance between the entry hole and the beginning of the horizontal section of the borehole. This is usually determined by the open area available for setting up the drilling equipment and the type of product to be installed.

Strike alert: A warning system that is set off by contact with electrical power source.

Swivel: Attaches between the back reamer and the product being pulled back to keep the product from twisting.

Thrust: The rig capacity to push the drill stem into the ground without rotating.

Torque: The rotational force applied to the drill stem joints.

Wetting agent: A substance that reduces the surface tension of a liquid, causing the liquid to spread across or penetrate more easily the surface of a solid. A soap-based wetting agent reduces the tendency of clay cuttings to stick together. It also reduces the tendency of the boring tools becoming stuck due to adhesion.

NEWSPAPER

DISTRIBUTION

GUIDELINES

For

Safety Roadside Rest Areas

HEADQUARTERS
OFFICE OF ENCROACHMENT PERMITS
&
OFFICE of STATE LANDSCAPE ARCHITECT

MARCH 2003

NEWSPAPER DISTRIBUTION GUIDELINES
SPECIAL PROVISIONS & PERMIT CONDITIONS

APPLICATION SUBMITTAL

Streets and Highway Codes Section 220.5 authorizes the placement of Newspaper Vending Machines, herein after referred to as "distribution boxes," at Safety Roadside Rest Areas (SRRA).

- Section 220.5 (c) authorizes the Department the rights of determination in which SRRA are suitable for placement of these facilities.
- Section 220.5 (d) authorizes the Department the right to determine a suitable fee.

Newspaper distribution boxes at Safety Roadside Rest Areas (SRRA) and Vista Points are permissible when a Newspaper Entity has entered into a "Newspaper Distribution Agreement," hereinafter referred to as "Agreement", through the Office of the District Landscape Architect.

The Office of the District Landscape Architect is responsible for all reviews, field studies, and document preparation before sending the completed package, consisting of the Agreement, the required fee/deposit and a completed Encroachment Permit Application to the District Encroachment Permits Office for permit issuance.

The Department retains all rights in determining whether or not the placement of Newspapers and distribution boxes will be allowed within any SRRA and/or Vista Point. When the Department grants permission to allow placement of these facilities, they shall be limited to a total of four units per SRRA location.

FEE / DEPOSIT

A check in the amount of four (4) hours of the encroachment standard hourly rate shall be submitted with the package to the District Permits Office. This deposit/fee will cover processing of the application, review, issuance of the permit and inspection. All permits issued for the placement of a Newspaper within a SRRA shall be issued for a period of one year.

The permittee is responsible for all actual costs of the permitting process. When there are issues of non-conformance that could result in additional time expenditures the permittee shall be required to compensate re-imbursement of that time expended.

SPECIAL PROVISIONS & CONDITIONS

Subcontracting under this permit will not be allowed for the placement of the newspapers.

The permittee is required to provide weekly maintenance checks on their distribution facility, to ensure cleanliness of the area surrounding their facility.

Storage of newspapers on State rights-of-way will not be allowed.

A copy of the newspaper is the only item that will be allowed in the window of the door on the distribution box.

The permittee is required to notify the States' representative prior to start of any work in the States' right-of-way, to include performing weekly inspections.

Vehicles shall be parked in the parking lot when filling or re-filling of the distribution boxes.

Any three violations of the special provisions or permit conditions within the term of the permit will result in revocation of your permitted privileges.

INSTALLATIONS & CONDITIONS

All new installations of distribution facilities shall be installed and maintained by the permittee under the direction of the States' representative and shall be in compliance with the following criteria:

Within each Safety Roadside Rest Area (SRRA), all distribution facilities (boxes and pedestals) shall all be of the same type, model, manufacturer and color (see Attachment #1 & #2) so that a uniform appearance is maintained as directed by the States' representative and per the attachments provided.

The distribution facilities shall be located within the SRRA as directed by the States representative, in the planted areas wherever practicable, adjacent to walkways and electroliers to reduce the exposure to vandalism and theft.

The distribution facility should be located in an area where it will be unobtrusive and not detract from other elements of the SRRA. It will be located so that it is convenient and easily accessible to the traveling public.

The front of the distribution facility should be parallel with the edge of the walkway.

The distribution boxes are to be securely fastened to square steel pedestal mounts, which are to be set in a concrete footing located within the planted area. The top of the concrete footing is to be covered with soil, mulch or ground cover to restore the area to its previous appearance to as great an extent as possible. Distribution boxes furnished with a pedestal mount equipped with a steel flange base designed to be bolted to concrete surfaces are to used only where directed by the Departments' representative.

All distribution facilities shall be free of any advertisements and shall be maintained in a clean, neat and attractive condition and in good repair at all times. Any facilities (boxes, pedestals) that are damaged, in a state of disrepair, or due to wear and tear which are no longer in a presentable condition (clean, neat and attractive) shall be replaced or repaired by the permittee within (48) hours after discovery or notification by the States' representative to do so.

All distribution facilities which have been lost, stolen or vandalized and facilities that are no longer to be used, shall be removed, replaced or repaired by the permittee within (48) hours after discovery or notification by the States' representative to do so.

Any distribution facility that is missing, vandalized or unused and is not to be replaced shall be removed, and the site shall be returned to its original condition.

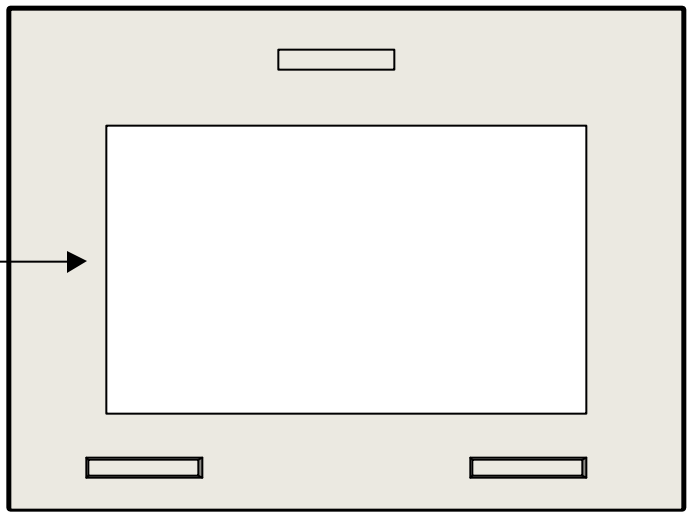
THESE GUIDELINES ARE SUBJECT TO CHANGE AT THE DISCRETION OF THE HEADQUARTERS OFFICE OF ENCROACHMENT PERMITS. IT IS THE RESPONSIBILITY OF THE PERMITTEE TO REMAIN CURRENT WITH THE SPECIAL PROVISIONS AND PERMIT CONDITIONS OF THESE GUIDELINES.

ATTACHMENT #1

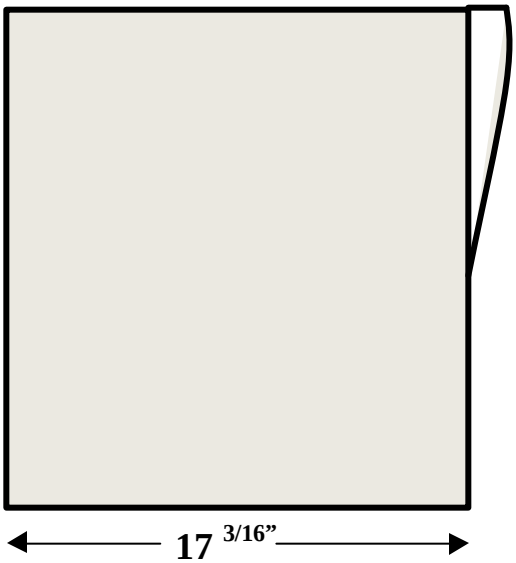
DISTRIBUTION BOXES

FACE VIEW

BEIGE COLOR

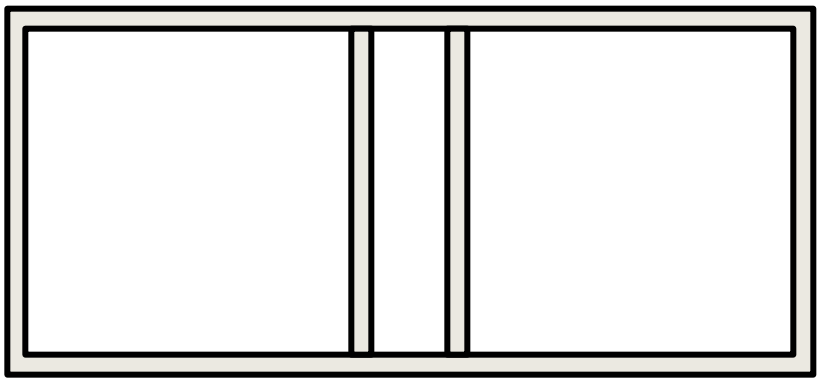


SIDE VIEW



DOUBLE BOX DIAGRAM

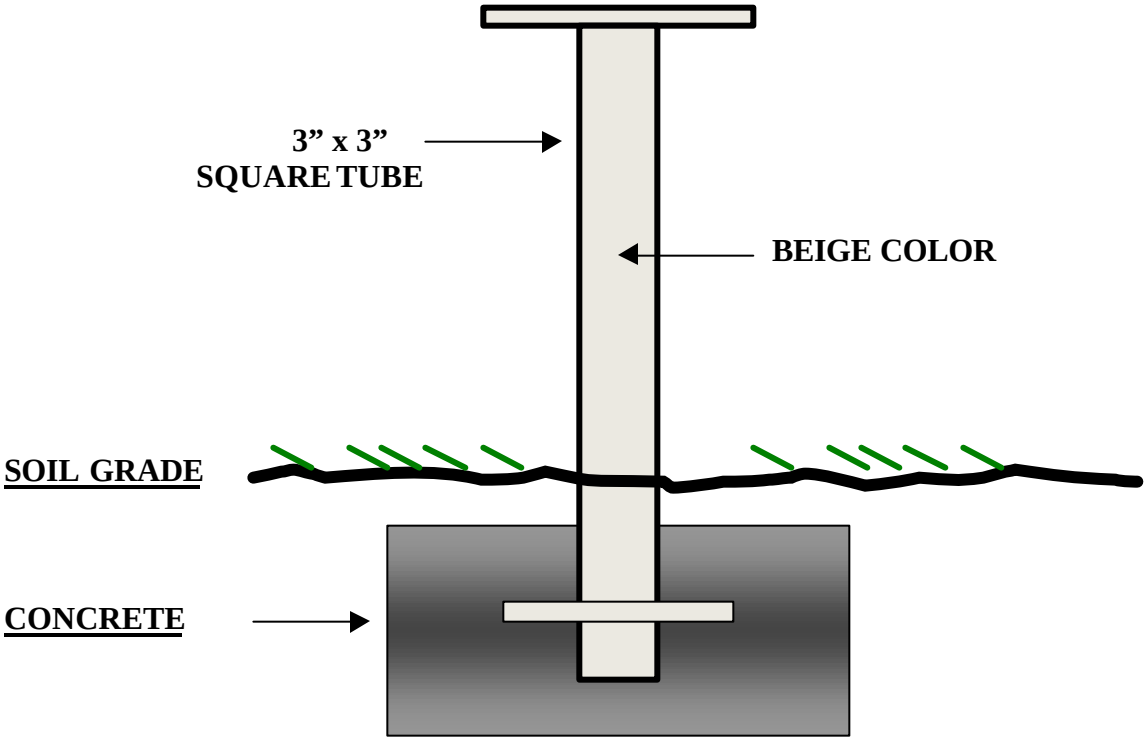
TOP VIEW
Of
BASE TRAY



ATTACHMENT #2

PEDESTAL

SINGLE BOX DIAGRAM



The distribution boxes are to be securely fastened to square steel pedestal mounts, which are to be set in a concrete footing located within the planted area. The top of the concrete footing is to be covered with soil, mulch or ground cover to restore the area to its previous appearance to as great an extent as possible. Distribution boxes furnished with a pedestal mount and equipped with a steel flange base that are designed to be bolted to concrete surfaces are to be used only where directed by the Department.

STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION

NEWSPAPER DISTRIBUTION AGREEMENT

TR-0150 (NEW 03/2003)

The undersigned newspaper distributor, hereinafter referred to as DISTRIBUTOR, desires to place and maintain **a newspaper** and newspaper vending machine, hereinafter referred to as "Machine", at certain identified safety roadside rest areas owned and operated by the State of California, Department of Transportation, hereinafter referred to as STATE. DISTRIBUTOR agrees that the following conditions apply:

1. DISTRIBUTOR shall comply with the applicable provisions of the California Administrative Code and directions from the STATE as to the location and placement of each Machine and including its associated pedestal.

2. DISTRIBUTOR shall indemnify, protect and hold harmless the STATE, its officers and employees from all claims for injury to persons or damage to property by reason of the presence, location and/or maintenance of the Machine on STATE property, or by reason of claims based on acts of DISTRIBUTOR'S agents, employees or workers.

3. Maintenance of the Machine shall be the sole responsibility of DISTRIBUTOR, including any replacement or repair of Machine stolen or damaged by vandalism. DISTRIBUTOR shall begin to make necessary repairs within 48 hours after receipt of written or oral notification by STATE.

4. In the course of servicing a Machine, DISTRIBUTOR shall not deposit in or about any safety roadside rest area any wrapping paper, tying material or other litter, except to dispose of such material in a receptacle intended for that purpose. Any material that cannot be disposed of in available receptacles shall be immediately removed from the premises by DISTRIBUTOR.

5. If the distribution of newspaper is discontinued for thirty consecutive days, DISTRIBUTOR shall remove the Machine and restore the site to its original condition.

   If the Machine to be removed is on a pedestal shared with other machines, DISTRIBUTOR shall modify the pedestal to properly accommodate the remaining machines.

   If, after such discontinuance, or if the terms of this Agreement are violated, and DISTRIBUTOR fails to remove the Machine and restore the site within ten days after reasonable notice and demand, STATE may thereafter remove the Machine and restore the site to its original condition and DISTRIBUTOR agrees to reimburse the STATE for the reasonable costs of that removal and restoration.

6. STATE reserves the right to close, temporarily or permanently, the safety roadside rest area for any reason without notification to the DISTRIBUTOR.

7. This Agreement shall commence on _____ 20___, and shall terminate on _____ 20___

The parties agree that only the following newspaper may be distributed:

NAME OF REST AREA(S)	TRAVEL DIRECTION	NEWSPAPER NAME

COMPANY NAME	CONTACT PERSON	PHONE NUMBER
ADDRESS		E-MAIL ADDRESS
DISTRIBUTOR'S SIGNATURE ▶		

DISTRICT USE ONLY

DISTRICT REST AREA COORDINATOR'S NAME	PHONE NUMBER
DISTRICT REST AREA COORDINATOR'S SIGNATURE ▶	E-MAIL ADDRESS

DEPARTMENT OF TRANSPORTATION

AND

CALIFORNIA HIGHWAY PATROL

Joint Operational Policy Statement

Revised March 1997

SPECIAL EVENTS ON CONVENTIONAL STATE HIGHWAY RIGHTS-OF-WAY

GENERAL

The Director of the California Department of Transportation (Caltrans) and the Commissioner of the California Highway Patrol (CHP) have entered into this agreement establishing criteria for the approval of permits allowing special events on conventional state highway rights-of-way under joint CHP/Caltrans jurisdiction. This agreement shall also provide for related traffic control services.

DEFINITIONS

The following guideline terms are defined for this policy statement as follows:

1 Special Event includes, but is not limited to, activities such as parades, marathons, bikeathons, walkathons, marches, and triathlons. Filming operations are covered under separate guidelines.

2. Encroachment Permit is a permissive authority to enter state highway right-of-way to conduct specified activities.

3. Conventional Highway includes all non-freeway and other non-access controlled highways having joint CHP/Caltrans jurisdiction.

4. Roadway Closure is any lane closure or stoppage of traffic that exceeds five minutes.

5. Intermittent Traffic Break is the slowing or stopping of traffic not to exceed five minutes.

GENERAL GUIDELINES

1 Special events and their locations need prior approval from the CHP and Caltrans.

2. When either agency becomes aware of a special event, they shall notify the appropriate headquarters special event coordinator of the other agency.

3. An encroachment permit is required whenever any special event activity is conducted within the state highway right-of-way which interferes with the unrestricted movement of traffic, requires special traffic control, and/or violates any sections within the California Vehicle Code (CVC) governing the permissible uses of a highway.

4. Before a permit is issued for a special event, a preliminary meeting shall be held with Caltrans, the CHP, and special event representatives to determine highway location feasibility, traffic control needs, the number of personnel required, timing of the event, safety considerations, and other related matters. The permit engineer or the CHP will be responsible for scheduling the meeting. When appropriate, other local authorities and law enforcement agencies shall be invited to attend the meetings.

5 Immediately prior to any special event, an operational meeting shall be held with Caltrans, the CHP, and special event representatives to ensure that all plans are finalized and that all participants are aware of their individual responsibilities. When appropriate, other local authorities, law enforcement agencies, and private traffic control company representatives shall be invited to attend.

6. During periods of high volume or peak traffic flow, special events shall be excluded from any roadway when such usage would have an adverse impact on traffic.

7. Normally, special events shall not be permitted between one hour before sunset and one hour after sunrise.

8. All roadway closures and required traffic control devices provided by qualified private traffic control companies shall conform to state specifications and standards contained in the Manual of Traffic Controls and the Standard Plans Traffic Control Systems issued by Caltrans.

9 Roadway closures will be approved only when adequate detours are available. The length of time necessary for roadway closures shall be specified on the permit.

10. Intermittent traffic breaks (not to exceed five minutes), including traffic breaks to allow event participants or spectators to cross the highway facility, shall be approved and provided by the CHP.

11. When required, the permittee shall supply a sufficient quantity of properly functioning communications equipment for effective control of the event.

12 No special event activity shall be allowed that may cause damage to state property.

13 State highway "No Parking" temporary signing requires proof of written authorization by the appropriate agency in unincorporated areas and adjacent cities. Such proof is to be attached to the state encroachment permit.

Permittee's support vehicles and equipment essential to the event shall be legally parked off the traveled portion of the roadway so that they do not interfere with the free flow of pedestrian or vehicular traffic. Support facilities to provide lunch or rest breaks for event participants shall be located off the state highway rights-of-way or in areas specifically designated in the permit.

The permittee shall notify Caltrans, the CHP, all affected local law enforcement agencies, fire departments, emergency services, and other interested persons at least 30 days prior to the event, or as otherwise permitted or required by the permit grantor.

All costs incurred by Caltrans and the CHP associated with the preliminary and operational meetings, permit processing, special traffic analysis, identifying sites, and actual on-site operations (including inspections, signing, traffic control, and monitoring of the event) shall be the responsibility of the permittee. Cost estimates shall be provided to the permittee when practicable.

17 A completed encroachment package shall be submitted by the applicant to the Caltrans District Permit Office for permit review and approval. This package shall include:

a. A completed Caltrans encroachment permit application

b. Traffic handling plans

c. If required, detour plans approved by the affected governmental agencies.

d Resolutions or written consents from all affected governmental agencies indicating formal approval of the special event and detour. Resolutions or written consents should conform to sample formats contained in the Caltrans Encroachment Permits Manual.

e. A certificate of liability insurance in an amount as determined appropriate for the event by Caltrans and/or the CHP. This certificate of liability insurance shall name the State of California, its officers, and its employees as insureds.

GUIDELINES APPLICABLE TO SPECIAL EVENT HIGHWAY CLOSURES

1 Full two-way directional roadway closures shall be selected where cross streets are at a minimum and where adequate detours, approved by the CHP, Caltrans, and affected local agencies, are available. If adequate detours are not available, the roadway closure shall not exceed one hour and appropriate liability insurance shall be provided by the permittee.

2. Special events for one-way directional closures shall require an approved lane closure, including a buffer zone, with the responsible law enforcement agencies or CHP controlling left turn and cross street traffic. Adequate detours, approved by the CHP, affected local agencies, or responsible law enforcement agencies, and Caltrans, shall be available.

3. All ingress and egress of special event participants and spectators to the closed portion of the highway shall be approved by the state representative in charge (Permit Inspector or CHP incident commander).

4 Operational decisions and/or emergency situations may require the roadway to be reopened immediately. The decision shall be made by the state representative in charge (Permit Inspector or CHP incident commander).

5. End-of-queue signing and/or end-of-queue protection is required when determined necessary by Caltrans and/or the CHP.

The foregoing does not preclude the development of additional guideline criteria by local CHP commands and local Caltrans Districts covering specific problems of mutual concern or interests. This agreement shall remain in effect until either agency deems it necessary to revise any portion of the agreement.

JAMES W. VAN LOBEN SELS, Director
Department of Transportation

3/28/97
Date

D. O. HELMICK, Commissioner
Department of California
Highway Patrol

3/10/97
Date

In accordance with the:

PROFESSIONAL ENGINEERS ACT (Business and Professions Code §§ 6700 – 6799), CHAPTER 7. PROFESSIONAL ENGINEERS, Article 3. Application of Chapter;

PUBLIC UTILITY PLANS DESIGNED BY THE OWNING UTILITY COMPANY OR BY OTHERS ON BEHALF OF THE PUBLIC UTILITY COMPANY, DO NOT REQUIRE THE SIGNATURE OF A PROFESSIONAL REGISTERED ENGINEER.

PROFESSIONAL ENGINEERS ACT

(Business and Professions Code §§ 6700 – 6799)

INCLUDES AMENDMENTS MADE DURING THE 2002 LEGISLATIVE SESSION
(Effective January 1, 2003, unless otherwise noted)

CHAPTER 7. PROFESSIONAL ENGINEERS

Article 3. Application of Chapter

6746. Exemption for communications industry

Plans, specifications, reports and documents relating to communication lines and equipment prepared by employees of communications companies which come under the jurisdiction of the Public Utilities Commission, and by employees of contractors while engaged in work on communication equipment for communications companies which come under the jurisdiction of the Public Utilities Commission, are not subject to the provisions of this chapter.

6747. Exemption for industries

(a) This chapter, except for those provisions that apply to civil engineers and civil engineering, shall not apply to the performance of engineering work by a manufacturing, mining, public utility, research and development, or other industrial corporation, or by employees of that corporation, provided that work is in connection with, or incidental to, the products, systems, or services of that corporation or its affiliates.

(b) For purposes of this section, “employees” also includes consultants, temporary employees, contract employees, and those persons hired pursuant to third-party contracts.

KIOSK

ADVERTISING/ DISPLAY

GUIDELINES

For
Safety Roadside Rest Areas

HEADQUARTERS MAINTENANCE

OFFICE OF ROADSIDES

JULY 2004

KIOSK ADVERTISING GUIDELINES

SUBMITTAL

Requests for placement of an advertisement/display within a Traveler/Tourist Information Center, hereinafter referred to as "Kiosk," shall be submitted by the responsible person for that activity, service or facility, hereinafter referred to as the "Requestor," to the District Safety Roadside Rest Area Coordinator (City, County, Chamber of Commerce, an Organization or by an Individual).

Kiosk Advertising Guidelines are established from Barclays California Code of Regulations, Title 21·Public Works, Division·2 Department of Transportation, Chapter·20 Permissible Activity and Use of Safety Roadside Rest Areas (SRRA) and Vista Points in and along California State Highways, which authorize the placement of commercial advertisements/displays within kiosks.

- Article 2, Section 2204 (b) authorizes the placement of commercial displays under an agreement within Traveler Information Centers for a cost.
- Article 2, Section 2204 (d) defines Traveler Information Centers as kiosks.
- Article 2, Section 2204 (f) authorizes the Department to place Public Information displays/advertisements determined to be of a specific value, interest or assistance to the traveling public, for a cost.

Streets and Highway Codes Section 220.5 authorizes the placement of kiosks, within Safety Roadside Rest Areas (SRRA), and the following advertisements/displays are allowed for placement at no cost.

- Section 220 authorizes the placement of agricultural displays.
- Section 221 authorizes the placement of information regarding missing children.

Forty-percent (40%) of the kiosk space shall be devoted to non-commercial public information. The remaining sixty-percent (60%) may be utilized as follows:

Placement of an advertisement/display shall be for a six-month or twelve-month period.

The format and content of the advertisement/display shall be provided for review and consideration. The District SRRA Coordinator is responsible for review and processing of submitted request.

Upon approval in writing from the Department, the advertisement/display shall not be changed or altered in any way without the written consent of the Department.

Displays approved for placement shall provide public information regarding:

- local and state points of interest
- local communities and community service facilities
- location of recreational areas and facilities (campgrounds, etc)
- identification of local automotive service stations
- food
- lodging
- traveler service related facilities

FEE

The entire fee of the agreement, per advertisement/display, is required due upon written approval of the request. Payment of the fee shall be a personal or company check, money order or cashier's check, made out to the Department of Transportation.

The assessed monthly fee is subject to change at the end of the existing agreement period entered into by the requestor and the Department.

CONDITIONS OF INSTALLATION

Installation or removal of the advertisement/display upon any kiosk shall solely be the responsibility of the Department. Under no circumstances shall the requestor install, replace, repair, alter or remove the advertisement/display.

The Department reserves all rights, as stipulated within Barclays California Code of Regulations:

- to reject or refuse at its sole discretion any advertisement/display which is false or misleading, which may misinform, or which does not qualify as traveler information under the Department's rules and regulations.
- to reject, refuse or remove any advertisement/display which does not conform to the Department's specifications, which is deemed unsightly or in a bad state of repair.
- to cancel the agreement at any time, upon ten-days written notification.
- any delay in the placement of an advertisement/display or interruption of the display time caused by the Department shall not constitute a breach of the agreement. In its discretion, the Department may extend the term of the agreement or provide a pro rata credit equal to the period of delay or interruption. Such extension or credit shall be the only damages recoverable.
- to close the Safety Roadside Rest Area for any reason without notification, temporarily or permanently, or to cancel the agreement. The requestor shall have no claim for damages, or extension of the agreement by reasons of such removal, disruption, discontinuance or termination.

The Requestor is responsible for the production of the advertisement/display at their sole cost and expense.

The Requestor is responsible at their own cost and expense for, the restoration, repair or replacement of any advertisement/display which is lost, stolen, defaced, damaged, or destroyed through no fault of the Department, or which is deemed by the Department to be in a faded, or deteriorated condition, regardless of the cause.

In this event, if the requestor fails to provide an acceptable replacement of the advertisement/display within thirty-days of notification, the Department may cancel the agreement.

The advertisement/display shall be of a professional quality, printed on LEXAN or a comparable material pre-approved by the SRRA Coordinator, able to withstand adverse conditions, such as direct sunlight, rain or snow and able to endure the length of the agreement. The minimal size of the advertisement/display allowed shall be no less than 10" x 14," and a maximum size of 14" x 20." Advertisement/displays not enclosed within a protective casing shall be durable, and protected with an anti graffiti coating.

SPECIAL PROVISIONS

Sub-contracting or third party agreements **will not be allowed** for the request or placement of an advertisement/display. The requestor is required to be solely responsible for the service or facility, listed within the advertisement/display.

The requestor assumes full and complete responsibility and liability for the content of the advertisement/display, and shall agree to save, defend, indemnify and hold the State, the Department, its officers, agents and employees harmless against any and all demands, claims, liability, damages and causes of action, including attorney's fees and all costs of any legal action occasioned by or resulting from injuries or losses to any person, firm or corporation, however occurring, resulting from their reliance on the person's or company's advertisement/display or from the form, content or representations contained therein.

THESE GUIDELINES ARE SUBJECT OF CHANGE AT THE DISCRETION OF THE DEPARTMENT. IT IS THE REQUESTOR'S RESPONSIBILITY TO REMAIN CURRENT WITH THESE GUIDELINES.

STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION

KIOSK ADVERTISING/DISPLAY AGREEMENT

HQ-MTCE-14 (NEW 12/2003)

The undersigned requests to place an advertisement/display within the Traveler/Tourist Information Center, hereinafter referred to as "kiosk" within the following Safety Roadside Rest Area.

The requestor hereby agrees to the following conditions:

I have read the Kiosk Advertising/Display Guidelines, and conditions contained herein and agree to comply. And, understand that any failure to do so will result in termination of this agreement.

The requestor assumes full and complete responsibility and liability for the content of the advertisement/display, and shall agree to save, defend, indemnify and hold the State, the department, its officers, agents and employees harmless against any and all demands, claims, liability, damages and causes of action, including attorney's fees and all costs of any legal action occasioned by or resulting from injuries or losses to any person, firm or corporation, however occurring, resulting from their reliance on the person's or company's advertisement/display or from the form, content or representations contained therein.

The name on the agreement shall be that of the responsible party for that service or facility. Sub-contracting or third-party agreements **will not be allowed** for the placement of an advertisement/display. The requestor is required to be solely responsible for the service or facility, listed within the advertisement/display.

The advertisement/display shall be of a professional quality, printed on LEXAN or a comparable material pre-approved by the SRRA Coordinator, able to withstand adverse conditions, such as direct sunlight, rain or snow and able to endure the length of the agreement. The minimal size of the advertisement/display allowed shall be no less than 10" x 14," and a maximum size of 14" x 20." Advertisement /displays not enclosed within a protective casing shall be durable, and protected with an anti graffiti coating.

The requestor is responsible for the production of the advertisement/display at their sole cost and expense.

The format and content of the advertisement/display shall be provided for review. Upon approval in writing from the department, the advertisement/display shall not be changed or altered in any way without the written consent of the Department.
The requestor is seeking placement in the following SRRA:

REQUESTORS NAME	CONTACT PERSON	PHONE NUMBER
ADDRESS		E-MAIL ADDRESS
REQUESTORS SIGNATURE ▶		

NAME OF SAFETY ROADSIDE REST AREA	TRAVEL DIRECTION	TYPE OF ADVERTISEMENT/DISPLAY		
			6 MONTHS ☐	$ 300.00
			12 MONTHS ☐	$ 600.00

DISTRICT USE ONLY

APPROVAL: YES ☐ NO ☐ COMMENTS: _____

CASHIER

INITIALS BY _____ DATE _____ ☐ CASH ☐ CHECK ☐ MONEY ORDER ☐ OTHER _____

AGREEMENT PERIOD

BEGINNING DATE _____ ENDING DATE _____

DISTRICT SAFETY ROADSIDE REST AREA COORDINATOR'S NAME	PHONE NUMBER
DISTRICT SAFETY ROADSIDE REST AREA COORDINATOR'S SIGNATURE ▶	E-MAIL ADDRESS

State of California Business, Transportation and Housing Agency

Memorandum

Flex your power!
Be energy efficient!

To: DEPUTY DISTRICT DIRECTORS
for Planning

DEPUTY DISTRICT DIRECTORS
for Operations

Date: August 2, 2004

From: BRIAN J. SMITH
Deputy Director
Planning and Modal Programs

LAWRENCE H. ORCUTT
Acting Deputy Director
Maintenance and Operations

Subject: Guidelines for Submitting Transportation Information from a Reporting or Monitoring Program to the California Department of Transportation (Department), Revised July 9, 2004

The California Environmental Quality Act (CEQA), (Public Resources Code [PRC] Section 21081.6) requires that public agencies adopt a reporting or monitoring program when they include environmental impact mitigation as a condition of project approval. PRC Section 21081.7 requires that public agencies submit such information to the Department if the project is of statewide, regional or area-wide significance; in addition, 21081.7 requires that the Department adopt guidelines for the submittal of such information.

In February 2003, the Department issued *Guidelines for Submitting Transportation Information From a Reporting or Monitoring Program to the Department* (Guidelines).

We revised the Guidelines, effective July 9, 2004, in response to comments and questions that we received following distribution of the February 2003 edition. The new Guidelines seek to clarify the procedures for the Department and public agencies by providing a bit more detail to the steps that we are asking them to take. In addition, we have modified the Checklist/Certification form to more easily accommodate its purposes.

The revised Guidelines are enclosed, as is a sample cover letter for use in forwarding them from district Intergovernmental Review (IGR) units to local public agencies.

Please direct questions to Tom Neumann, Chief, Office of Community Planning at Calnet 8-461-6882, or Paul Cavanaugh, Chief, Encroachment Permit Branch at Calnet 8-464-6232.

Enclosures:
1. Guidelines, including "Checklist/Certification" form
2. Sample cover letter.

c: Joan Sollenberger, DOTP
Karla Sutliff, DOTO
District Directors
Paul Cavanaugh, DOTO, Encroachment Permit Branch
Maxine Ferguson, Legal Division
Robert Wiswell, Division of Aeronautics
District IGR Coordinators
Tom Neumann, DOTP,OCP
Terri Pencovic, DOTP, OCP, IGR

Guidelines for Submitting Transportation Information from a Reporting or Monitoring Program to the California Department of Transportation

for a

Project of Statewide, Regional, or Areawide Significance

California Department of Transportation

July 9, 2004

GUIDELINES FOR SUBMITTING TRANSPORTATION INFORMATION FROM A REPORTING OR MONITORING PROGRAM TO THE CALIFORNIA DEPARTMENT OF TRANSPORTATION (DEPARTMENT)

INTRODUCTION

The California Environmental Quality Act (CEQA) requires, under Public Resources Code (PRC) Section 21081.6, the adoption of reporting or monitoring programs when public agencies include environmental impact mitigation as a condition of project approval. Reporting or monitoring takes place after project approval to ensure implementation of the project in accordance with mitigation adopted during the CEQA review process.

Assembly Bill 1807 (effective January 1, 2001) amended the PRC in a number of ways. Section 21080.4 was amended to add a requirement that lead agencies submit Notices of Preparation (NOPs) to the Governor's Office of Planning and Research when they determine that an environmental impact report will be required to approve a project.

Section 21081.7 was amended with two additional provisions. The first provision required that transportation information resulting from a reporting or monitoring program adopted by a public agency in accordance with Section 21081.6 be submitted to the Department of Transportation (Department) when a project has impacts that are of statewide, regional, or area-wide significance. The second provision required that the Department adopt guidelines for the submittal of those reporting or monitoring programs.

PURPOSE

The purpose of these guidelines is to establish clear and consistent statewide procedures to be used by both Department District Intergovernmental Review (IGR) Program Coordinators to identify the scope and timing of transportation information needed from lead agencies, and public agencies when submitting transportation information to the Department, in accordance with Section 21081.7.

PROCEDURES A. The District IGR Program Managers and/or Coordinators shall:

1. Prior to implementation of mitigation measures:

   a. Notify the CEQA lead agency by letter during "early consultation," the Notice of Preparation (NOP) stage, or the Initial Study (IS) phase of the CEQA review process that the transportation information included in the reporting or monitoring program will need to be provided to the Department following project mitigation agreement.

   b. Provide the name, address, and telephone number of the District IGR contact to the lead agency.

   c. Provide, as an enclosure to the notification letter, a copy of these "Guidelines" and the Department's "CEQA Lead Agency Checklist/Certification" form. (Part 1 of the form, *Checklist*, is to be signed by the lead agency following project approval, and a copy submitted to the District along with the transportation reporting or monitoring information. Part 2 of the form, *Certification*, is to be signed by the lead agency and the District upon implementation of all agreed-upon mitigation measures.)

2. Following implementation of mitigation measures as identified in Part 1, *Checklist,* of the CEQA Lead Agency Checklist/Certification form, and certification of implementation by the lead agency in Part 2, *Certification*:

   Ensure sign off of Part 2, indicating that the mitigation measures have been implemented.

   1) If the project required encroachment onto a state highway, obtain the District Permit Engineer's signature in Part 2.

   2) If the project did not involve encroachment onto a state highway, the District IGR Coordinator shall sign Part 2.

3) The District IGR Coordinator shall: (a) Retain the original document; (b) forward a copy to the District Permit Engineer (if the Permit Engineer signed Part 2); (c) forward a copy to the Department's Headquarters IGR Program Manager; and, (d) send a copy to the lead agency.

B. The CEQA lead agency shall:

1. Following project approval:

Submit the following information to the Department District IGR contact:

1) Name, address, and telephone number of the CEQA lead agency contact responsible for the mitigation reporting or monitoring program.

2) Location and custodian of the documents or other material, which constitute the record of proceedings upon which the lead agency's decision to approve the project is based.

3) Assurances that the Department can obtain copies of the aforementioned documents and materials, if needed, to clarify details or resolve issues related to the mitigation adopted.

4) Detailed information on impact assessment methods, the type of mitigation, specific location, and implementation schedule for each transportation impact mitigation measure included in the reporting or monitoring program.

5) A copy of the "CEQA Lead Agency Checklist/Certification" form, with Part 1, *Checklist,* signed and dated, and the reporting or monitoring program transportation information attached or enclosed. The CEQA lead agency, at its discretion, may submit the complete reporting or monitoring program with the required transportation information highlighted.

2. Following implementation of mitigation measures:

   a. Sign and date Part 2, *Certification,* of the "CEQA Lead Agency Checklist/Certification" form.

   b. Forward the "CEQA Lead Agency Checklist/Certification" form, with appropriate completion documents attached, to the District IGR contact, certifying that the mitigation measures agreed upon and identified in the reporting or monitoring program have been implemented, and that all other reporting requirements have been adhered to, in accordance with PRC Sections 21081.6 and 21081.7.

APPROVED:

Brian J. Smith 8 July 04

BRIAN J. SMITH Date
Deputy Director
Planning and Modal Programs

L. H. Orcutt 7-9-04

LARRY ORCUTT Date
Acting Deputy Director
Maintenance and Operations

CEQA LEAD AGENCY CHECKLIST/CERTIFICATION ♦

TRANSPORTATION INFORMATION FROM A REPORTING OR MONITORING PROGRAM

Part 1 - Checklist

Project Name: _____

Lead Agency: _____

Lead Agency Contact (Name, Title, Agency, Address & Phone): _____

_____

State Clearinghouse (SCH) File #/s: _____

Document Type/s: _____

Findings & Approval Date/s: _____

_____

Project Proponent (Name, Title, Company, Address & Phone): _____

_____

For each specific Transportation Related Mitigation Measure associated with this Project, The following information items are included in the attached materials:

Yes	No	
☐	☐	**Location/Custodian Of CEQA Documents, Proceedings, Records**
☐	☐	**Description Of How To Obtain Copies Of Above Documents**
☐	☐	**Mitigation Measure Name & Identifying Number**
☐	☐	**Detailed Description of Measure & its Purpose (attach blueprints if necessary)**
☐	☐	**Measure Location Description, Latitude/Longitude, & Vicinity Map**
☐	☐	**Location of Impacted State Highway Component (County, Route, Postmile)**
☐	☐	**Caltrans Encroachment Permit Number (if one was needed)**
☐	☐	**Copy of Other Agency Permits required for this Measure (if needed)**
☐	☐	**Completion Criteria (including detailed performance objectives)**
☐	☐	**Implementation Schedule**
☐	☐	**Estimated Monetary Value of Completed Measure & % Local Agency Funded**
☐	☐	**Responsible Contractor (Name, Company, Address & Phone)**

The above project mitigation measures will be implemented as indicated in the adopted reporting or monitoring program, and the California Department of Transportation will be notified upon implementation.

_____ _____

CEQA Lead Agency **Date**

Part 2 - Certification

We certify that the agreed upon mitigation measures have been implemented, and all other requirements have been adhered to, in accordance with PRC Sections 21081.6 and 21081.7. Attached: 1. Completion evaluation (including field inspection reports); 2. Photograph of completed measure.

Signature & Date: _____ _____

Name: _____ _____

Title: _____ _____

CEQA Lead Agency **California Department of Transportation**

♦ **This form is to be used by public agencies to submit their mitigation reporting or monitoring programs to the California Department of Transportation (Department) when a CEQA project has been found to have transportation or circulation impacts that are of statewide, regional, or area-wide significance. Copies of this form, and the Department Guidelines developed pursuant to PRC Section 21081.7, can be downloaded from our website (http://www.dot.ca.gov/hq/tpp/offices/ocp/igr_guidelines_procedures.htm). Completed form with attached materials may be post-mailed, e-mailed, or faxed to the appropriate Department District Planning Office, Attention: Intergovernmental Review (IGR) Coordinator. {Form Version 07/2004}**